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THE SUPER-UNIVERSITY*

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I am using the term "super-university" as the title of this address merely to direct attention to the evolution which is taking place in institutions of higher learning. The word is unnecessary except for this purpose, since the term "university" is sufficiently broad in meaning to include all of the activities which it will represent for some time to come.

Nature of Functions.—The scope and functions of the highest school in our system of education are now undergoing attempted redefinition. Both educators and laymen are busy telling the world what the university should be and what it should not be. Strong differences of opinion are apparent: It should emphasize culture or stress professional training. It should compel the student to maintain certain standards of performance, both scholastically and personally, or permit him to develop according to his own desires. It should sacrifice everything else to instruction or recognize research as a major objective. It should limit instruction to those students who can live on the campus for the time prescribed by a rigid curriculum or extend its teaching facilities

*Read at the complimentary dinner tendered to Regent Richard R. Smith of Grand Rapids, January 14, 1932, by the Kent County Medical Society and the Fifth Councillor District of the Michigan State Medical Society.

to those who find it necessary to be otherwise engaged while acquiring an education. It should attempt to train students only during the period of from four to seven years after graduation from high school or give some attention to adult education. It should assist adults in problems of material concern to them or refuse to give expert advice. It should attack practical problems or only encourage so-called pure research.

The literature embodying arguments on these and similar educational policies on which there is disagreement is so voluminous that it is impossible to cite it in detail in a short paper. Fortunately, however, it is unnecessary to follow closely the many controversies over the proper sphere and policies of the university. These will never be settled by balancing arguments upon the legitimacy of particular functions, and, educators being for the most part independent thinkers, individual schools will continue to be developed more or less heretically. While universities will thus probably, and perhaps preferably, never conform to a single pattern, it should be observed that many of the differences in policies and practice depend just now upon the point of view adopted as to the importance and place of extramural activities, including extension work, adult education, and service. The functions included in this general field may appropriately be considered with care both because of their apparent importance and because attempts to define our modern universities should not consist of efforts to fit these institutions to a Procrustean bed of preconceived notions, traditions, and the ideas of persons too myopic to appreciate in full their possibilities of usefulness. No study of universities that ignores the resources of the plants and multifarious needs of society can provide dependable results.

Cultural and Professional Training.—Admitting that an objective of the university is to educate youth, we must recognize that this training is designed to prepare men and women for life in the world as it is to be, and that life is living as well as being. In other words, it is futile to attempt to prove that our universities should exist for the sole purpose of training scholars or of providing a cultural background for others. One cannot distinguish sharply between cultural and practical training. Erudite investigators in every realm of knowledge are important to human welfare, but they constitute only one group in our social order and they are really practitioners. Indeed, true culture cannot be separated entirely from pursuits. A cultured man or woman without a business, if such a person exists, is like a flowering weed—possibly beautiful, but out of place.

It is true that ridiculous mistakes in emphasis have been made in introducing the objective of vocational competency into our universities. Institutions have even been guilty of giving academic credit for proficiency in skills which only need to be practiced to be learned, but to insist that vocational training should not be offered by universities in every necessary field of human endeavor, cultivation of which requires both an intimate knowledge of subject matter and a historical background, is impracticable. One may be excused for smiling at the inclusion of dressmaking and canoeing in a university curriculum, but logically he cannot object to departments of forestry, pharmacy, journalism, and business administration, and at the same time admit the traditional schools of law and medicine. Subjects of instruction proper to the university are those which provide a strict and regular mental and moral training comprehending the communication of knowledge, the cultivation of manners, and the regulation of practice. Thought cannot be divorced from action, and in curriculum-making the question of practicality is inconsequential.

Intramural and Extramural Instruction.—Anyone familiar with the conditions in the colleges understands the handicaps common to many students. Among these are inability to pay the full tuition at the beginning of the school year, the necessity of negotiating loans and of securing part-time employment, and the inability of some individuals to remain in school for four or more consecutive years. To conclude that no assistance should be given to such underprivileged students is to imply that opportunities for youth should be limited to individuals in a financially fortunate position. This thesis can scarcely be defended, and, unless it can be, one cannot argue cogently against a program of extramural education for those who cannot afford to attend the university for the prescribed periods of time.

No one will deny that the student will obtain less from any series of extension

courses that he would get by taking these courses on the campus, but this is no excuse for denying him such advantages as he might receive from instruction brought to him. It must be admitted that the tendency to give extension courses which will attract students and thus increase the size and income of the university has been all too common. The practice is to be deplored, but should not be allowed to obscure the value of the worth-while instruction that is now being given off the campus by many schools. When extension courses carefully maintain the ideal of progressive instruction designed to promote the intellectual growth of the student—an ideal which is fundamental to any real university—their designers are but extending the practice of the best schools of refusing to admit that brains and opportunity to develop them are restricted to those persons who have adequate means.

Whether cultural or practical, or both, as we insist it should be, education does not end with college. Organized and supervised study may be, and indeed too often is, abandoned with the last examination, but at least learning by experience continues. While it will always be true that "the gain of experience is the choicest fruit and the most valuable acquisition that man can obtain on the stage of creation," after as well as during college, study may greatly decrease the cost and time entailed in learning by the trial-and-error method. If the university may appropriately supervise study during and even prior to the college period, it is difficult to see why it may not as justifiably take an interest in the welfare of its graduates to the extent of aiding them in continuing their intellectual growth. Particularly is this deduction logical if alumni are expected to lend their assistance in the educational efforts of their schools. In these days of rapid increase of knowledge it is a foregone conclusion that even with the aid of experience the graduate will find it difficult to keep up with the progress in his special field of endeavor. He will always be able to use to advantage the aid which his university can give him, and it is a narrow view of the functions of those institutions which would forbid him their help.

But the alumni are not the only adults who have an investment in the university and who can and should use the facilities of the institution to conserve the time consumed in learning. It has become evident that for our citizens generally the time has come in the evolution of our society when "we should aim at every adult person in this country an education which he cannot escape, and that, when it has found its mark and hit him, will drive him from his reliance on passion and prejudice and make of him a citizen of the Greek kind" (Baker). Continuous education being a necessity, the university, as the highest school in our system, is the one to which most adults must turn for instruction, and the institution is not doing its full duty to society if it does not recognize the education of adults as at least a legitimate function. The alternative point of view means duplication of effort and waste of facilities.

Research and Service. — If we cannot separate professional and cultural training and adolescent and adult education, neither can we entirely divorce research and service. To know his world, man must not only increase his knowledge but he is also required to conserve his knowledge. The function of investigation is now quite generally granted to universities, and this function will never be seriously threatened even by privately endowed and industrial research organizations. Striking as factory-made research may be in its immediately practical results, it can never be a satisfactory substitute for the disinterested efforts of individuals searching out the ultimate ramifications of truth. The hope of our society is to be found in no small measure in the labors of scholars, imbued with a love of truth for its own sake, to extend the bounds of human knowledge in all directions regardless of results. It is only in the university that these labors can be carried on continuously through the years, and it is in the university that the results can be accumulated and preserved as a vast heritage for future generations.

The old discussion of the relative values of pure and practical investigation is obviously a quite fruitless one. All research is practical, and the only recognizable distinctions are in the material rewards and in the length of the period between the time of discovery and the time of application of a new fact or truth in the business of living. If we have learned anything in this scientific era it is that the length of the interval between discovery and application is unpredict-

able except when research is applied to a problem the solution of which is of immediate and material concern to us. I am well aware that much labor that is called research is not correctly so designated, but, setting aside the mere accumulation of facts as not properly research, it is difficult to see any real difference between an investigation of the laws of evolution and a study of the possibilities of an insect-carrier in poliomyelitis, or between a study of certain laws of physics and the contribution which a knowledge of these laws can make to the explanation and correction of defects in steel.

There is frequently, of course, a difference between researches conducted with reference to a concrete end and those which presumably have only a potential value, in the material rewards which tend to accrue to the individual and the institution. I submit, however, that this difference is incidental from the university viewpoint, much as it may affect individual workers. There are just two criteria for the university to set up for judging the appropriateness of an investigation. First, is it research? That is, does it have possibilities of extending the realm of human knowledge by providing generalizations from which may be deduced the explanation of other facts? Second, are the results to be public property? The aim of the university is to aid society. The benefits to be derived from its investigation should be shared by all, not be given exclusively to individuals to be exploited at the expense of others or of the group. Whenever these two questions can be answered in the affirmative a problem may be taken up without apology, and the question of material rewards may be treated as a problem of administration and nothing more.

This conception of research and its place in the university inevitably leads to the conclusion that it does not affect the nature of a problem to be presented by a person who is not a scholar, and that consequently it cannot be fundamentally wrong for the university to attack any subject presented to it, whether it be submitted by scholars, private individuals, business concerns, or in fact any organization, if it is a problem whose solution will require real, and not pseudo, research. This is a part of the extramural service which some schools insist upon providing for their clientele. Another allied phase of this service is the providing of information from the knowledge and experience of the members of the faculties and the storehouse of information represented by the laboratories and libraries of the institution. While theoretically well marked, practically the boundary between investigation and the furnishing of information is hazy and easily lost. Fortunately it is not necessary to observe it. If the university is concerned with the welfare of adults then it may certainly, and with propriety, give to them the advice which does not entail new researches, as well as the benefits of instruction and research. It is only necessary to observe that, the university being an organization of society, its advice, like the results of its investigations, must be made available to anyone who desires aid. For the university, as well as for the individual, service should become an aristocratic tradition.

Conclusion.—In short, the areas of interests have widened for the university, and several of them are projecting themselves beyond the college walls. The institution cannot decently become intellectually exclusive. It has, in the words of President Butler, "come to occupy a position of singular responsibility and authority. Dealing as it does with the conservation, the extension and the diffusion of knowledge, the university stands apart from every other institution and agency of man's economic, social and political life, while serving and conserving each one of these. The university is only incidentally and accidentally a school. It is primarily and chiefly a society of scholars who by reason of special capacity, special training and special opportunity become in their generation the conservators of that knowledge which represents human achievement at its best and the agency for the extension of that knowledge into new fields of interest and endeavor, as well as the means of diffusing knowledge over steadily widening areas of human interest and human action." Specific applications, and technics and social service in the broad sense cannot be ignored, and the conclusion can be defended that "a fair and discriminating association of theory and practice, with an approach toward application in upper college years, is sound common sense."

I can with some certainty anticipate one criticism of the conclusions I have expressed.

It is that this viewpoint would extend the university until the institution would be in danger of becoming thin and that *pari passu* the traditional major activity—the training of youth—might be relegated to the position of a mere side-show. I hasten to point out, however, that such a contingency, if it should arise, could be attributed correctly to poor administration. I am talking today of legitimate functions of the ideal modern, or, perhaps better, future university. All institutions will not be able to perform and stress equally all of the activities proper to universities as a group. Hampering conditions make administrators necessary, and the main task of university officers is to maintain a proper balance between, or emphasis on, functions—a coördination which is to be determined in its details not alone by the facilities at the disposal of the institution, as is sometimes thought, but also by the relative importance of objectives as reflected by conditions. I am trying to say that the university as an institution is rapidly becoming the brain of society, that it should be nourished by the body politic, and that it should never fail in its task of adjusting and directing the activities of society through any narrow conception of its sphere of usefulness. It serves the whole body, and throughout life should guide it, not selfishly, nor for the good of any part at the expense of another, but for the sole purpose of securing and insuring the welfare of society.

CANCER CONTROL IN MICHIGAN

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A few months ago we had a very pleasant visit with Dr. Rector. Feeling that few with whom we came in contact had the cancer situation so well in hand, we asked him to prepare a short paper on the subject of Cancer Control in Michigan. This article was written in response to our request. It is much superior to anything we might hope to write ourselves on the subject; we hereby accord our thanks to Dr. Rector for this favor. —EDITOR.

During the past twenty years cancer has shown a marked increase as a leading cause of death in the United States, and since 1927 has occupied second place in the mortality table. Since 1924 one in twelve, or eight per cent of all deaths in the registration area has been due to this disease. Heart disease alone surpasses cancer as a cause of death in the United States today.

The annual economic loss due to cancer has been estimated at more than $800,000,000. It respects neither race nor color, social nor economic condition. Its wide distribution, increasing death rate, and unknown etiology make it the greatest challenge now before the medical profession. On the other hand no other disease in the realm of medicine is so amenable to the skill of the physician. Other diseases run their course and the patient either dies or recovers with or without professional aid. The number dying is usually a small percentage of those affected. A cancer patient seldom if ever recovers without the intervention of surgery or irradiation, the efficiency of these treatments depending on the skill and experience of the physician using them and the early stage of the disease.

For the above reasons the control of the cancer problem is peculiarly in the hands of the medical profession and the hospitals. The known collateral factors bearing on cancer are so few that only medical skill and proper institutional care at this time can make a constructive contribution to the control of the disease.

It is believed by those having the most experience with cancer that it is no longer a one man disease; that is, no one physician should undertake full responsibility for the diagnosis, treatment and care of a cancer patient. Team work is called for in that the pathologist should determine the type and grade of tumor before final treatment is undertaken; the radiologist should also contribute of his knowledge and experience to the decision as to treatment; the surgeon and internist have a contribution to make to the case in order that the patient may have the benefit of all phases of medicine that can best contribute to his treatment and care.

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That the suggestion for team work in cancer diagnosis and care is not an idle one is seen in the marked interest taken in this subject by physicians and hospitals throughout the country. Improved facilities for the diagnosis and treatment of cancer are being investigated and developed to the end that better service may be rendered to cancer patients and the mortality from this disease may be lessened.

The organized medical profession in Michigan has shown its interest in cancer by the appointment of a Cancer Committee of the State Medical Society for the study of this problem. From its inception, this committee has been very active in studying the resources and facilities of the state for the care of cancer patients. The interest and coöperation of local and district societies have been enlisted to determine what facilities are available throughout the state for the care of these patients. The recommendation of this committee that at least one meeting annually of each local society be devoted to cancer will do much to keep the problem actively before the profession throughout the state. The first report of this committee which appeared in the February issue of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY is a splendid presentation of the scope of its work.

The work of the recently organized Michigan Pathological Society, one of whose major objectives is the coöperative study of malignancy, will most certainly result in improved diagnosis of cancer or suspected cancer tissue. The development of organized cancer services in the University Hospital at Ann Arbor, Harper and Ford Hospitals in Detroit, Blodgett and St. Mary's in Grand Rapids, offers centers that may be utilized for both undergraduate and postgraduate teaching in better diagnostic and treatment methods. The organization of similar services is being considered in other Michigan hospitals, so that in time improved facilities for diagnosis and treatment will doubtless be available to the majority of residents of the state.

At this time it is felt that efforts should be concentrated on the improvement of diagnostic and treatment facilities in various hospitals throughout the state. When such facilities are available an educational campaign can be directed to the public to inform it of the necessity for early diagnosis and early adequate treatment and where such diagnosis and treatment can be obtained.

To the development of the program outlined above, the American Society for the Control of Cancer is glad to contribute as far as possible. The Society realizes that ways and means must be developed locally by the medical profession and the hospitals for the control of the disease. It will gladly render all practical assistance possible through its state committee, of which Dr. Max Ballin, Detroit, is chairman, and the field representative for the central district. This assistance will consist of advisory service to local groups, the presentation of statistical and other facts bearing on the disease, both in Michigan and nationally, and the supplying of literature and motion picture films on various phases of the subject of cancer control.

In conclusion, I would emphasize the necessity for team work in dealing with cancer problems; for an active interest in the subject by all physicians in order that the control of this problem does not get into other hands; for the continued support of the work of the Cancer Committee of the State Medical Society in its efforts to make the medical profession and the hospitals of Michigan more cognizant of their responsibilities and opportunities in the control of this disease.

VALUE OF LIVER EXTRACT AND IRON IN ANEMIA OF YOUNG INFANTS

SIEGFRIED MAURER, JOSEPH GREENGARD and CESSA KLUVER, Chicago, found it possible to control the anemias of early infancy by administration of liver extract and iron which contains traces of copper. The administration of iron with traces of copper to anemic infants failed to bring about an improvement in blood in about 50 per cent of cases, and liver alone failed in but 37 per cent. The patients in the latter group made significant improvement in blood after iron was added. Also of those infants of the iron series who had failed to make improvements in blood on the iron and copper mixture, those who received liver extract in addition made good gains. Of the infants who showed improvement on either iron or liver extract or on the two together, sometimes before, but always by the time the improvement in blood was apparent, the general condition definitely changed. Appetite improved, the skin became rosier, and normal turgor appeared. In addition, the infants showed definite psychic changes. Irritability disappeared, activity and alertness increased, and rapid gain in weight occurred. In every instance, liver extract was taken well and gastro-intestinal disturbances, such as vomiting or loose stools, were never observed.—*Journal A. M. A.*

THE RÔLE OF AMINO ACIDS IN THE ANIMAL ORGANISM

II. THE PHYSIOLOGY OF THE AMINO ACIDS

BEAUMONT FOUNDATION LECTURE II

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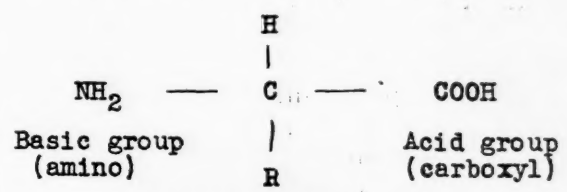
Early in the nineteenth century, Mulder, the Dutch chemist, who in 1839 suggested the term protein for albuminous matter, wrote, "In both plants and animals a substance is contained which is produced within the former, and is imparted through their food to the latter. To both, it uses are numberless. It is one of the most complicated substances, is very changeable in composition under various circumstances, and hence is a source of chemical transformations, especially within the animal body, which cannot even be imagined without it. It is unquestionably the most important of all known substances in the organic kingdom. Without it, no life appears possible on our planet."

"It forms different compounds with sulphur, with phosphorus, or with both—and hence the difference it presents in appearance and physical properties. This substance has received the name of protein, because it is the origin of so many dissimilar bodies, and is itself therefore a primary substance."

Early workers believed that all proteins were similar chemically and that the processes of digestion and metabolism were essentially processes of solution by which those proteins, which were insoluble, entered into solution and thereby were able to be absorbed from the gastro-intestinal canal and circulate in the blood stream to be carried to all the cells of the body. Digestion was thus synonymous with solution. With the discovery of the three enzymes of the digestive tract, pepsin, trypsin, and erepsin, and the realization that the action of these enzymes was one of hydrolysis, a cleavage of the molecule into smaller fragments with the addition of water, such a simple explanation of the phenomena of protein metabolism was no longer tenable. The diversity of the proteins as they existed in nature, not only in their physical properties, but also in the nature of the units comprising the molecule, was soon recognized. Since the proteolytic enzymes are now known to effect an almost complete hydrolysis of protein to its ultimate units, the amino acids, in the alimentary canal, it has become increasingly important to recognize the significance of the liberated amino acids in the processes of metabolism. For the last thirty years, therefore, the study of the intermediary metabolism of proteins has centered first upon their hydrolysis and secondly upon the subsequent metabolism of the constituent amino acids, of which some twenty or more are now definitely identified as constituents of the protein molecule. The physiology of the proteins has thus become largely a problem of the physiology of the individual amino acids.

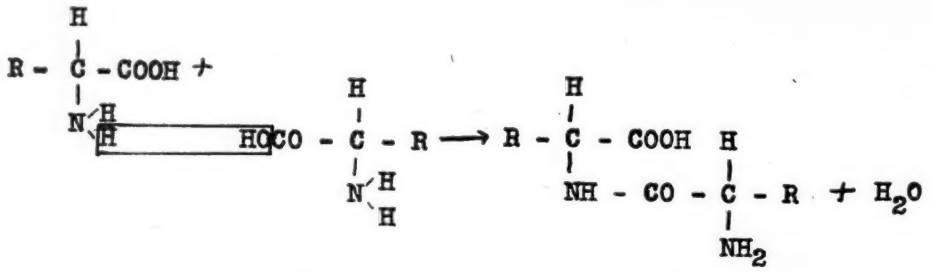
The amino acids in contrast to the large complex colloidal protein molecule are simple diffusible substances of low molecular weight. They contain nitrogen chiefly in the form of primary amine groups, that is, they are substituted derivatives of ammonia and exhibit properties of bases. They are also simple organic acids. They all have in common the primary amine group (NH_2) and the simple grouping characteristic of organic acids (COOH) but each acid is distinctive in regard to the nature of the rest of the molecule. We thus find amino acids containing sulfur (cystine), the benzene nucleus (tyrosine, phenylalanine), the imidazole nucleus (histidine) and many other



(Characteristic substituent grouping).

groups. Two of these acids may be joined together with the loss of a molecule of water to form a dipeptide, a compound with properties similar to the original amino acids but of greater complexity. Further condensation of many molecules of amino acids in a similar manner results in the production of a very large complex peptide, the protein molecule.

The processes of digestion involve a cleavage of this large peptide to liberate the amino acids. The protein, in the form of these acids, simple diffusible molecules, is thus enabled to traverse the intestinal wall, is absorbed into the portal circulation, passes through the liver and enters the systemic blood. The protein material in the form of amino acids is then taken up from the circulating blood by the tissues.



One of three fates awaits each amino acid which thus enters the living cell. The first is condensation with other amino acids, selected by the particular tissue in question from the pabulum supplied to it by the blood, to form the protein characteristic of that particular tissue or cell. This specific synthesis, the converse of digestion, makes possible the maintenance of the individuality of the cell. This process acquires a particular significance in young animals in which building of new tissues, growth, must occur for normal development, and in the adult in normal pregnancy and lactation.

A second fate which may await the amino acid in the cell is utilization for some specific purpose, apart from protein synthesis, in the animal economy. Examples of this are the utilization of specific amino acids for the elaboration of the hormones as insulin or thyroxin, which are amino acid derivatives, for the synthesis of specific catalysts as glutathione, a catalyst for oxidation, and for many other reactions of a similar nature. Some of these will be considered later.

After the needs of the cells for these two purposes have been met, an excess of amino acids may still remain in the cells. The fate of this amino acid fraction is deamination, removal of the nitrogenous portion of the molecule, and oxidation of the non-nitrogenous portion, since in contrast to fat and carbohydrate, no storage of protein or amino acids over any considerable period of time appears to be possible. The nitrogenous fraction of the molecule, split off as ammonia, is rapidly converted into urea under normal conditions and is eliminated in this form by the kidneys. The efficiency of this transformation is demonstrated by the fact that normally systemic blood contains less than 0.1 mg. of ammonia nitrogen per 100 c.c. while the urea content of normal blood calculated as urea nitrogen is approximately 17 mg. per 100 c.c. The non-nitrogenous residue which remains after deamination may either be transformed into glucose and used in this form, the antiketogenic fraction of the protein molecule, or be oxidized directly to carbon dioxide and water, the ketogenic fraction of the protein molecule. Whether the non-nitrogenous residue is oxidized directly to carbon dioxide and water or is converted to glucose for utilization in that form depends upon the chemical structure of the original amino acid. In general we may say that about half of the amino acids present in the molecule of any individual protein may give rise to glucose in intermediary metabolism. A schematic representation of these processes is presented in Figure 1.

Some aspects of these metabolic relationships may now be considered in greater detail.

THE ABSORPTION OF NATIVE PROTEIN IN UNALTERED FORM FROM THE GASTRO-INTESTINAL TRACT

Although digestion studies *in vivo* with experimental animals with fistulas at various levels throughout the alimentary canal have clearly demonstrated that the major portion of the ingested protein is completely hydrolyzed to amino acids or at least to very simple peptides, the question of the absorption of some portion of the protein of the diet in unaltered form into the circulation must be considered. It is hardly necessary to discuss in detail the importance of this problem; apart from its interest from the

standpoint of the digestion, absorption and metabolism of the proteins, it bears a close relationship in its practical aspects to pathology, immunology, and dermatology.

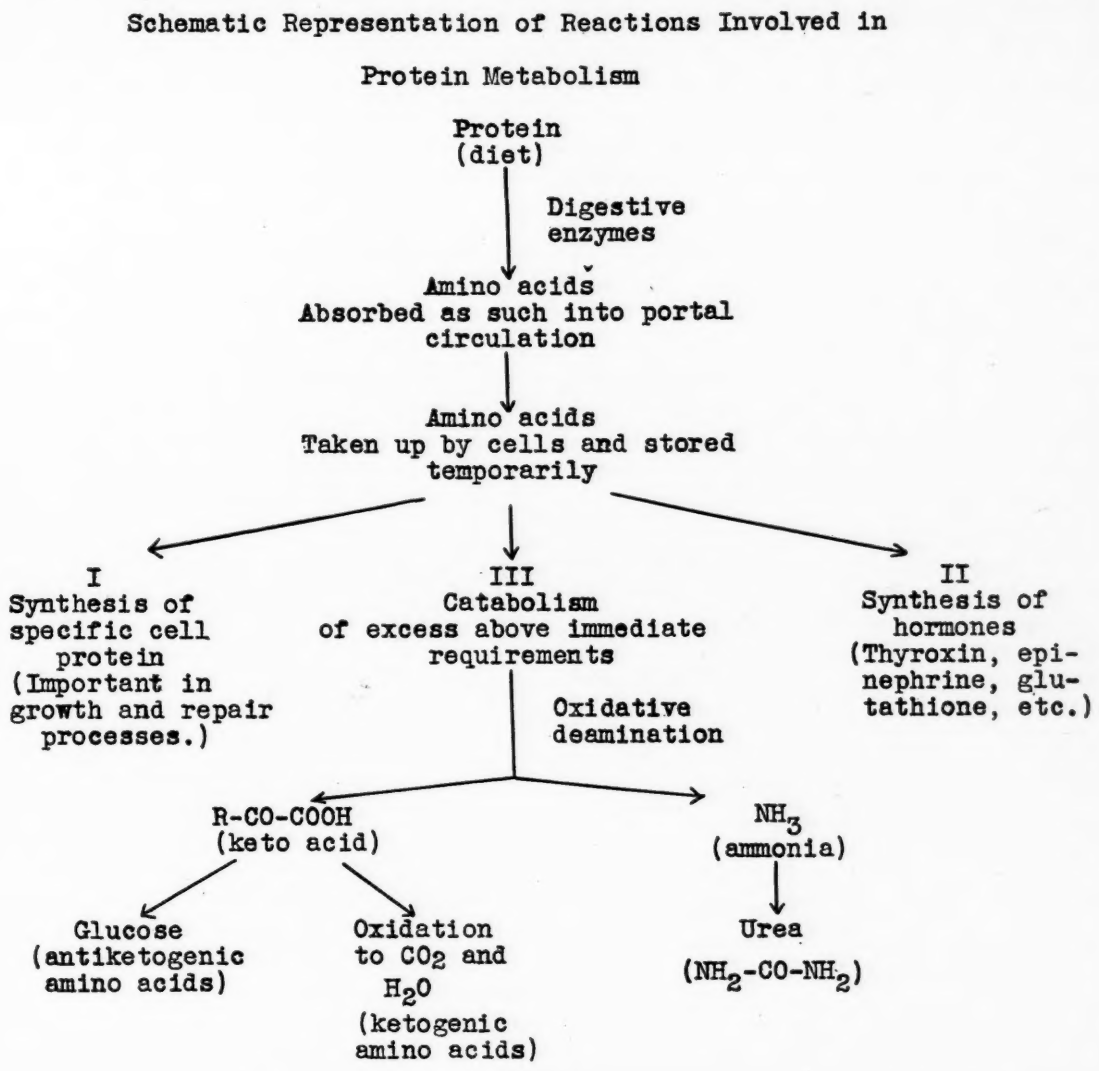


Figure 1.

Early workers whose experimental methods were not adequate, were led to favor the possibility of such an absorption under *unusual* circumstances, particularly in young animals, in which the intestinal membrane was assumed to be more readily permeable. The use of the newer methods of immunology, by which accurate detection and differentiation of very small amounts of specific proteins have been made possible, has thrown new light on the question. By these methods, it now appears to have been demonstrated that in most individuals, without regard to age or sex, a detectable amount of certain proteins *frequently* enters the blood stream in an unaltered state via the alimentary canal. As Walzer has expressed it, "The regularity with which the phenomenon occurs in the average individual and the uniformity of results when repeatedly tried under identical conditions on the same subject, preclude the possibility that this is an accidental or unusual occurrence." Of the protein foods studied, the most extensive observations have been reported with egg white. Some data are also available which indicate that the proteins of the diet may appear in very small amounts in the milk, in some individuals at least. These findings are of special significance in relation to the phenomena of sensitization to specific protein foods. However, it should be remembered that the methods of immunology are capable of detecting exceedingly minute amounts of protein and that the total amount of protein absorbed thus unaltered must be very slight. We may, then, with a reasonable degree of confidence look to the

behavior of the individual amino acids for the interpretation of normal protein physiology.

THE ESSENTIAL AMINO ACIDS

It had been recognized for years that proteins as they existed in nature were not all equal in value as regards their more important physiological rôles as structural units in the cell or as regulators of various physiological processes. With the recognition of the nature of the protein as a complex of a large number of units, the amino acids, a clearer understanding of the factors which determined this biological value of protein became possible. Mendel in his "Nutrition, the Chemistry of Life," has ably summarized the change in the viewpoint.

"Today we are concerned with the question whether this or that protein, whatever its biologic origin, will yield the characteristic desired amino-acids, such as tyrosine and tryptophane, leucine and lysine, glycocoll and cystine, histidine and arginine. Our attention is fixed on the building-stones or units out of which the great protein structures are put together. Instead of referring to the proteins in terms of their physical properties or empirical composition—their content of carbon, hydrogen, oxygen, nitrogen or sulphur—at least so far as the problems of nutrition are involved, the time has arrived for estimating their behavior in the organism on the basis of the quota of each of about eighteen well-defined amino-acids which the individual representatives of this group of foodstuffs can yield. Many, if not all, of these amino-acids are essential for the construction of tissue and the regeneration of cellular losses. In proportion as any specific protein can furnish these constructive units it may satisfy the nutritive needs of the body. The efficiency of the individual protein in this respect must depend on the minimum of any indispensable amino-acid that it will yield; for it is now known that some of them cannot be synthesized anew by the animal organism. If, for example, a protein or mixture of proteins comparatively deficient in their yield of the sulphur-containing amino-acid cystine be furnished alone to supply the body's nitrogenous requirements, the production of new, cystine-yielding molecules of protein will be limited by the amount which is available in the diet. An excess need not be wasted, for it can be burned up like sugar or fat to provide energy; but new construction or growth is limited by the minimum of the essential unit" (pg. 116).

Which of these units are indispensable? What are the essential amino acids? The complete answers to these questions are still to be obtained. Of the 20 amino acids known to be present in proteins, only four, lysine, histidine, tryptophane and cystine, have been definitely proven to be indispensable components of the diet, in the absence of which normal nutrition is impossible. The importance of some of the others, glycine, arginine, tyrosine, proline and hydroxyproline, glutamic, hydroxyglutamic and aspartic acids, is uncertain; the experimental data indicate that some of these, as glycine and glutamic acid, are probably not essential units. The remaining known amino acids of the protein molecule, alanine, serine, valine, the three isomeric leucines, phenylalanine and the recently discovered methionine, have not as yet been carefully studied experimentally and their rôle is unknown.

It has long been known that the mixture obtained by complete hydrolysis of a protein of good quality to its constituent amino acids may be as adequate in supplying the body's requirements for protein as is the unhydrolyzed protein. Is it possible to secure the same satisfactory results with mixtures of purified amino acids, mixed in proportions to simulate the composition of some natural protein of superior quality? Studies of this type have been attempted in a few instances only and results have hitherto not been striking. In a notable study, Rose and his coworkers at the University of Illinois have recently fed young white rats with diets in which protein has been replaced by highly purified amino acids (J. Biol. Chem., 94, 155, 167, 173 (1931-2)). Rats which received these diets lost weight rapidly during the first 12 days and then declined gradually or maintained weight to the end of the experiment. When 5 per cent of casein, gliadin or gelatin replaced an equivalent amount of the amino acid mixture, the animals lost less rapidly in the initial days of the experiment and then slowly gained. Casein was more effective than either of the other two proteins added as supplements. These experiments led to the conclusion that growth-promoting proteins must contain at least one essential other than the amino acids at present recognized as constituents

of the protein molecule. Still more striking gains in weight were obtained when the fraction extracted from hydrolyzed casein by butyl alcohol was substituted for 5 per cent of the amino acid mixture. If the nature of this unknown growth-stimulating constituent of the protein molecule can be determined, it should then be possible to secure normal growth with the protein element entirely replaced by a mixture of synthetic chemical compounds, the amino acids. With the successful promotion of growth by synthetic mixtures in this manner, it will then be possible to determine with certainty which of the known amino acids are essential for life. The whole problem of the significance of the individual amino acids in nutrition must be investigated anew.

What is the function of these essential amino acids? What is the occasion for this necessity of a constant supply of protein from the diet? In growth, the answer is a simple one. In the growing organism, new cellular material, new protoplasm, is constantly being constructed and to insure a continuance of this process an ample supply of the building stones, the amino acids, must be furnished by the food. The complete degradation of the protein molecule in digestion makes possible the presentation of a wide variety of building stones to the cells and thus each tissue is enabled to select those amino acids for resynthesis to protein, which will result in the formation of the particular protein, characteristic of that tissue and of the species. The individuality of the tissue proteins is thus maintained despite the ingestion of food proteins of widely differing chemical composition and origin.

In adult life, the function of protein is more difficult to explain, since in the adult new cellular protoplasm is not formed extensively. Formerly frequent reference was made to the "wear-and-tear" quota of protein required for maintenance, a simile drawn from the supposed resemblance of the protein of the cells to the framework of a machine, which might be expected to call for repairs and replacements. This conception appears incorrect in the light of our present knowledge of protein metabolism. The tendency is to think of the protein requirement of the adult organism as a means of furnishing certain amino acids as precursors of hormones or other substances essential for the proper regulation of the reactions of tissues. Thus thyroxin bears a close chemical relationship to tyrosine as does also epinephrine. Insulin appears to be a relatively simple peptide which contains a number of the more common and important amino acids, notably cystine. Creatine, which is intimately related to the maintenance of the tonicity of muscle, is a derivative of guanidine, a chemical group which is found also in the amino acid arginine. Gluthathione, a tripeptide, which is composed of one molecule each of glutamic acid, cysteine, and glycine, is considered to have an important rôle in the regulation of normal oxidative processes in the organism. These and many other nitrogenous compounds, related to or derivable from amino acids, are concerned with the maintenance of the normal metabolic processes of the tissues. If the amino acids from which these substances are derived are not furnished by the diet, it seems probable that the protein of the less essential tissues is broken down to furnish the precursors of these regulatory substances. If the protein of the diet supplies these necessary amino acids in adequate amounts, we may assume that the integrity of the tissue proteins is maintained. This explanation of the function of protein in the adult organism, while not entirely satisfactory, appears to be more in harmony with the present-day conception of the physiology of the amino acids than the older conception of the "wear-and-tear" or "replacement" quota of Rubner. Successful completion of the experiments of Rose, if they afford a means of securing normal nutrition of laboratory animals on mixtures of pure amino acids as the source of nitrogen, will make possible the direct experimental testing of this theory. For example, it should then be possible to eliminate completely tyrosine and phenylalanine from the diet and to study experimentally the effect on the production of epinephrine or thyroxin as well as the effects of such amino acid deficiency on the processes of growth and the function of adrenals or thyroids.

THE FORMATION OF UREA FROM AMINO ACIDS

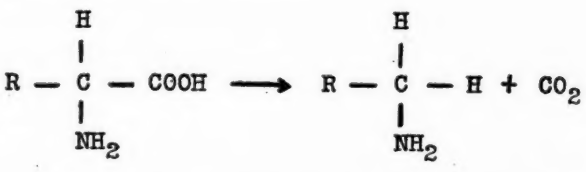
Those amino acids taken up by the cells from the blood stream, which are not required for synthesis of new protein or as precursors of hormones and related substances, are rapidly deaminized and the nitrogen excreted as urea or ammonia. Except under conditions where the amino acid

requirements for synthesis of body protein are great, as in young animals, by far the greater part of the nitrogen of the absorbed amino acids appears to be converted to urea. Much research has been concerned with the problem of the site of this transformation of the nitrogenous waste products of metabolism to urea. Two answers have been suggested. The wide distribution of urea in nature from the lowest to the highest form of animal life has suggested that its formation must be one of the more fundamental processes of metabolism and thus be a property of all cells. This consideration has led Folin and others to the view that deaminization and urea formation occur in all body cells, in all tissues where amino acids are presented for catabolism. However, anatomical considerations have suggested another point of view. The fact that absorbed products of protein digestion must pass via the portal circulation through the liver, the largest glandular organ of the body, before entering the general circulation has led Van Slyke, Mann and others to believe that the liver has a specific rôle in urea formation. The best experimental evidence in support of this view has been obtained by Mann of the Mayo Clinic in studies of hepatectomized dogs. In these animals, there was observed a marked and progressive decrease in the urea content of the blood and tissues which was accompanied by a similar decrease in the urinary urea. In the dehepatized dog, there was also a failure of the normal process of deaminization, as evidenced by an accumulation of amino acid nitrogen in the blood, comparable in amount to the nitrogen converted to urea by the normal fasting animal. It may then be stated definitely that, in the dog, deamination of amino acids and synthesis of urea are directly dependent upon the presence of the liver. Whether this predominance of the liver in amino acid metabolism also holds for species other than the dog is open to question. It seems probable that deamination and formation of urea in man may occur in all tissues, but that in the liver, as the largest glandular organ, the processes are of particular significance quantitatively.

Studies of liver function under conditions of hepatic disease or experimentally in acute poisoning of the liver (chloroform, phosphorus, etc.), have not shown the marked deviations from the normal formation of urea to be anticipated if the liver were the only organ concerned in urea formation. It has been suggested that, if the liver were put under an increased strain by the administration of amino acids in relatively large amounts, differences in metabolism might be observed to result from even moderate degrees of liver injury. There has been, however, no agreement concerning the value of such tests of liver function and much more careful study is necessary before the value of such tests as diagnostic procedures can be determined.

THE SYMPATHOMIMETIC AMINES—HISTAMINE

Another chemical reaction of amino acids demonstrated to occur in the animal organism is decarboxylation, a process by which carbon dioxide is split off and a primary amine is formed.



The formation of amines from amino acids was shown to occur in the intestine as a result of the activities of the intestinal flora, but the extent of the reaction and the physiological significance of the products formed have not been clearly established. Of the amines formed, histamine, derived from histidine, is the most active. Other amino acids than histidine produce physiologically active amines by decarboxylation, but none of these (*e.g.*, tyramine, cadaverine, etc.) approach histamine in pharmacological activity. Histamine is one of the most powerful depressor and oxytocic substances known. It has also been demonstrated that histamine is a powerful stimulant to the secretion of gastric juice when administered orally or parenterally in small doses.

The earlier work of Koessler and Hanke indicated that any histamine absorbed from the intestine was rapidly detoxicated by the liver and that little, if any, of this very active substance entered the general circulation. Recently, however, histamine has been obtained by simple methods of extraction from a considerable number of fresh normal tissues, an isolation and general occurrence which is an important link in a chain of evidence which may lead to the establishment

of a *physiological* rôle for this powerful amine. Its general occurrence and the effect on blood pressure, on contraction of smooth muscle and on capillaries suggest that it may perhaps be classed as a hormone. Earlier work had been directed primarily to a demonstration of the relation of histamine to certain *pathological phenomena,* secondary wound shock, anaphylactic shock and intestinal obstruction. Best in a recent review has summarized the evidence in favor of a physiological rôle (Best, C. H., Physiol Rev., 11, 371 (1931)). "There is, however, at present, no conclusive evidence that histamine is the causative agent in any pathological condition. While there is no indication that interest in this aspect of the subject is decreasing, the results of recent researches have drawn attention to the possibility that the amine may possess physiological significance."

"A number of points provide interesting but indirect evidence in favor of this possibility. The presence of a histamine-like vasodilator material in human skin and the ease with which it can be released by mechanical stimulation or by nerve impulses, and the liberation of sufficient of this material in certain human subjects to cause flushing of the face, secretion of gastric juice, or lowering of blood pressure similar to that produced by the subcutaneous injection of histamine, are suggestive points. The fact that many physiological processes are affected in opposite directions by histamine and epinephrine, together with the evidence that liberation of epinephrine from the adrenal glands is caused by injection of histamine, suggest that these substances may be physiological antagonists, while the demonstration of what appears to be a specific enzyme system for the inactivation of the amine indicates that a slower acting protective mechanism may also be available. The presence of relatively large amounts of histamine in the lungs of certain species is undoubtedly of physiological significance, but attempts to determine what this significance is have not yet succeeded. The evidence that the production of local effects seems to be the most important function of the histamine-like substance suggests that it is only liberated in quantities which are chemically very minute. If this is true, it will be very difficult to establish whether or not the amount of the substance in a tissue varies under physiological conditions."

If it is established that histamine has an activity beneficial to the organism, the question of the site of its formation is raised. It seems hardly possible that a substance of direct physiological importance for the maintenance of normal conditions in the body would arise from the activity of microörganisms of the intestine, an activity which in general can hardly be considered as advantageous to the system. It appears more probable that the reaction of decarboxylation may occur to a slight extent in the tissues themselves to form this physiologically important substance. In harmony with this view is the recent demonstration of a specific enzyme capable of the destruction of histamine, whose function would seem to be to act as a check on any over-production or accumulation of histamine.

It should also be pointed out that while recent investigation has centered around the occurrence and activity of histamine, the most active of these biogenous amines, it is by no means impossible that amines derived from other amino acids, *i.e.*, tyramine, with similar although less marked physiological action, will be demonstrated to occur in normal tissues and to play a rôle in normal body reactions. Further developments in this field of research are likely to prove of great importance in the near future.

EXPERIENCES WITH PERIARTERIAL SYMPATHECTOMY IN FRACTURES OF THE LOWER EXTREMITY

Ralph Colp and Sigmund Mage call attention to the fact that periarterial sympathectomy seems to have a physiologic basis for application in the problem of fracture repair. In a series of seven recent fractures of the lower extremity there was a diminution of time in obtaining clinical union of eleven days and in hospitalization of nineteen days, and no case showed a tendency toward delayed union. In a series of ten cases of delayed union in fractures of the lower extremity which were ununited after an average of seventy days, clinical union rsulted twenty-one days after sympathectomy in eight cases. The experimental and clinical evidence seems to justify a further trial of this operation in recent fractures and in those in which union appears to be delayed.—*Journal A. M. A.*

SERVICE FOR THE AMBULATORY DIABETIC

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This is a survey of the service given to ambulatory diabetics by the Department of Metabolism of the North End Clinic for the last four and one-half years. Part I is a survey of our experiences in the operation of a diet kitchen for the feeding and instruction of metabolic patients. Part II is an analysis of the end-results of our medical service to ambulatory cases that have been referred for diabetes mellitus.

PART I. SERVICE IN THE DIET KITCHEN

The metabolic kitchen was opened to facilitate our study of metabolic cases and to render a much needed service to patients requiring dietary management and instruction. Here the patients can obtain their own individual calculated and weighed diets, together with a carefully organized and graded course in dietetic management.

The dietetic instruction is given by graduate dietitians. Group instruction is given in so far as this is possible, but much individual instruction is necessary to meet the requirements of individual cases. The most unique feature in this arrangement is that the patient can receive his individual diet, learn the fundamentals of his disease and its dietary management, and still continue with his work. He is given all the advantages of hospitalization, except rest in bed, without losing any time from his job. These facilities are available not only to the clinic patients, but also to private patients sent in by physicians who wish to procure for their patients accurate dietary control and instruction without the increased cost and loss of time incident to hospitalization.

The kitchen was opened for the purpose of giving both practical and theoretic dietary instruction. The creation of a service of this type in a metropolitan center for the service of the working classes was more or less experimental, and there was no beaten path to follow. Primary interest from the very first has been focused around the scientific study of the cases. The average period of feeding and instruction has been from two to three weeks. However, there have been some cases where the home surroundings did not permit of accurate dietetic management, and these cases have been taken into the kitchen as boarders. In the first few weeks the kitchen was in operation we learned considerable, not only about diabetes but also about human nature. At first the rates were very flexible and varied from pure charity to a fee of $17.50 per week. It was soon observed that those who paid for their food gave better coöperation and progressed much more rapidly than those who got their board for nothing. Admissions to the kitchen were not made for any definite period but it was understood that the patients could stay until they had learned to manage their diet. Under this system it was to the financial advantage of the patient to remain in ignorance as long as possible. The free cases were always the last to leave the kitchen, and the first to apply for readmission. In fact it was soon learned that some of these patients broke their diets deliberately and induced ketosis so that they would be readmitted to free board. It was also discovered that those of ample means were dissatisfied to pay the higher rates for a service that was given to their associates for little or nothing.

At first the patients were allowed to pay when they left the kitchen; we very shortly discovered that this was also an error for some stayed as long as possible and then left without settling their bill. These abuses were soon corrected. A definite weekly rate of $8.75 for clinic and $17.50 for private patients was established. Only patients who had a real need for the service were admitted to the kitchen. As these policies were gradually evolved the attendance in the kitchen was somewhat reduced, coöperation was improved and the average stay in the kitchen for each admission has

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decreased with each succeeding year. This study extending from 1927 to 1931 covers the peak of a boom and the bottom of a depression. This circumstance has had a pronounced effect upon the attendance in our kitchen in the last two years. There are many now who need the service and cannot afford it. Only the most pressing cases are being admitted as charges of the public Welfare, and the Jewish Social Service. This service can be given now at one-half the cost of the cheapest type of hospitalization.

The following tables give an arithmetical picture of the service given in the kitchen in the last four and one-half years.

The total attendance in the kitchen is made up of new patients as shown in Table 2, and of readmissions as shown in Table 3.

It will be noted that the average stay in the kitchen has been decreased gradually, during this time the teaching service has been improved and we are now able to accomplish the desired results in about one half the time that we could in 1927, while the charge for this service is only 42 per cent of that charged in 1927. A total of 234 metabolic patients made a total of 326 admissions to the diet kitchen. A total of 24,033 meals was served during this period, for a charge of $10,594.06, or an average charge of $.44 per meal. The average raw food cost per tray during this time was $0.458. Except for the two years when food costs were greatest the income from the patients more than covered the cost of the food. However, there should be a daily average of 8 to 10 patients at the rate of $1.25 per day per patient in order to meet the total cost of the kitchen.

TABLE 1

TOTAL ATTENDANCE IN DIET KITCHEN YEAR BY YEAR

Total Patients in Diet Kitchen, New and Old	1927	1928	1929*	1930*	1931* (6 mo.)
Number of individuals	61	71	51	46	23
Number of admissions	82	87	58	47	23
Number of days	2,261	2,496	1,242	987	333
Average number of days per individual	37	35	24	21	14
Average number of days per admission	28	29	21	21	14
Income from patients	$2,928.72	$3,096.23	$1,709.11	$1,526.25	$ 468.75
Income per individual	48.01	43.61	33.51	33.18	20.38
Admissions paid by patients	74	75	50	38	17
Admissions paid by organizations	0	8	9	10	7
Admissions paid by both	0	0	1	0	0
Unknown	8	4	0	0	0

*This chart does not include one patient who was in the kitchen continuously from August 8, 1929, to June 30, 1931.

TABLE 2

NEW PATIENTS ATTENDANCE IN YEAR OF ADMISSION

	1927	1928	1929*	1930*	1931*
Number of individuals	61	57	37	27	16
Number of admissions	82	69	44	28	16
Number of days	2,261	1,781	964	530	248
Average number of days per individual	37	31	26	20	16
Average number of days per admission	28	26	22	19	16

TABLE 3

READMISSIONS IN ALL YEARS

Old Patients	1927	1928	1929*	1930*	1931*
Number of individuals	0	14	15	19	7
Number of admissions	0	18	16	19	7
Number of days	0	715	424	457	85
Average number of days per admission	0	40	27	24	12

*This chart does include one patient who was in diet kitchen continuously from August 8, 1929, to June 30, 1931.

PART II. ANALYSIS OF END-RESULTS IN CASES INVESTIGATED FOR DIABETES MELLITUS

From November, 1926, to June 30, 1931, a total of 248 patients have been referred for the diagnosis and treatment of metabolic disturbances.

3 cases were referred for diet instruction only.

11 cases were referred for the study of thyroid dysfunction.

12 cases were referred for the treatment of obesity.

222 cases were referred for the diagnosis and treatment of diabetes.

Some of the private cases had only diet kitchen records and for this reason a survey of the medical service rendered concerns itself chiefly with clinic cases. The charts of 218 patients referred to the department of metabolism for diagnosis and management of diabetes were analyzed and are presented here.

Of the 218 patients referred for diabetes, 184 cases, or 84 per cent, were found to have diabetes. Of the 34 patients who did not have diabetes 19, or 56 per cent, were diagnosed as renal glycosuria, 3 cases, or 9 per cent, were lactating mothers, while 12 cases, or 35 per cent, showed transient glycosuria of undetermined origin.

In this last group of cases both hyper- and hypoglycemia were frequently present. The glucose tolerance curves were very atypical and as yet we have not been able to put them into any definite classification. A special study is now being made of these cases. The diagnosis of renal glycosuria was made only in those cases that showed a persistent glycosuria with a normal blood sugar irrespective of diet or insulin.

218 Patients Admitted for Diabetes.

Clinic patients	201
Private patients	17
White	206
Colored	12
Male	80
Female	138

Diagnosed diabetes mellitus	184
Renal glycosuria	19
Lactating mothers	3
Unclassified glycosuria	12

184 Cases of Diabetes.

Diet and Insulin	70, or 38 per cent
Diet only	114, or 62 per cent

70 Patients Taking Insulin.

Insulin reactions	18, or 26 per cent
No reactions	52, or 74 per cent

Family History. A family history of diabetes was obtained in 18 cases, or 9 per cent of those diagnosed diabetes.

CLASSIFICATION OF 184 CASES ACCORDING TO AGE OF ADMISSION

Young (under age 30)	22 cases, or 12 per cent
Middle Age (between 30 and 50 years)	88 cases, or 48 per cent
Old (over 50 years)	74 cases, or 40 per cent

88 per cent of the cases diagnosed diabetes were over age 30 on admission

CLASSIFICATION OF 184 CASES ACCORDING TO C. H. O. TOLERANCE

Mild diabetes mellitus	80 cases, or 43.5 per cent
Moderately severe diabetes mellitus	81 cases, or 44.0 per cent
Severe diabetes mellitus	23 cases, or 12.5 per cent

The 184 cases were classified as mild, moderately severe, or severe according to whether they could tolerate 150, 100 or 50 gms. of carbohydrate, with 1.5 gms. of fat per kilo and enough protein to establish nitrogen balance and assure proper growth and development.

CLASSIFICATION OF 125 CASES ACCORDING TO DURATION OF DIABETES

1 month to 2 years	46 cases, or 36.8 per cent
2 years to 5 years	31 cases, or 24.8 per cent
5 years to 16 years	48 cases, or 39.4 per cent

There was 1 case of 15 years', and 1 case of 16 years' duration. In the remaining 59 cases the onset had been so gradual that it could not be determined.

PATIENTS TAKING INSULIN (70 cases, or 38 per cent)

Age	Same Insulin Same Diet	Increased Insulin Same Diet	Decreased Insulin Same Diet	Stopped Insulin Same Diet	Total by Age
Young, under 30	2(20%)	4(40%)	4(40%)	0	10(45.5%)
Middle aged, 30/50	8(26.5%)	11(36.5%)	6(20%)	5(17%)	30(34%)
Old, over 50	7(23.3%)	12(40%)	10(33.3%)	1(3.4%)	30(40%)
Total by tolerance	17(24.5%)	27(38.5%)	20(28.6%)	6(8.6%)	70

As shown in the above chart, 17, or 24.5 per cent, of the 70 patients who took insulin remained on the originally established dose of insulin; 27, or 38.5 per cent, had to have

their insulin increased on the same diet; 20, or 28.6 per cent, had their insulin reduced on the same diet, while 6, or 8.6 per cent, were able to discontinue insulin while taking the same or a better diet. Of the 70 patients taking insulin, 10 were young, 30 were middle aged, and 30 were old. In other words in this series 45.5 per cent of all the diabetics under the age of 30 years were given insulin, 34 per cent of those between 30 and 50 years were given insulin, and 40 per cent of all those over 50 years were given insulin.

It has been our experience that the elderly Jewish diabetic does not coöperate well. This group of patients are not conscientious with their diet so we have attempted to give them such a liberal diet that they will have little inclination to break it. This type of treatment makes insulin necessary in a larger percentage of the cases. We also use insulin in these elderly cases for the treatment of complications.

Of the 17 cases who remained on the originally established dose of insulin 2 were young, 8 were middle aged, and 7 were old. Of the 27 cases who had to have their insulin increased 4 were young, 11 were middle aged, and 12 were old. These last mentioned 12 cases form the majority of our worst offenders in regard to the regulation of the diet.

Of the 20 cases who had their insulin reduced on the same diet, 4 were young, 6 were middle aged and 10 were old. Of the 6 cases who were able to stop insulin and remain on the same or a better diet, none were young, 5 were middle aged and 1 was old. Of the 10 young diabetics on insulin, 2, or 20 per cent, remained on the originally established dose of insulin; 4, or 40 per cent, had to have the insulin increased; and 4, or 40 per cent, were able to have insulin reduced on the same diet. Of the 30 middle-aged diabetics on insulin, 8, or 26.5 per cent, remained on the originally established dose of insulin; 11, or 36.5 per cent, had to have their insulin increased; 6, or 20 per cent, were able to decrease their insulin; and 5, or 17 per cent, were able to stop insulin while taking the same or a better diet. Of the 30 elderly diabetics on insulin, 7, or 23.3 per cent, were able to remain on the originally established dose of insulin; 12, or 40 per cent, had to have their insulin increased; 20, or 28.6 per cent, were able to decrease their insulin; and 1, or 3.4 per cent, was able to stop insulin on the same or a better diet. The one elderly diabetic who was able to stop insulin and take a better diet has always given excellent coöperation, and has been a constant boarder in the kitchen since August 8, 1929. This case will be reported in detail later by Dr. I. H. Friedman.

X-RAY STUDIES

152 X-ray examinations were made on the 218 patients referred for diabetes as follows: Bones 55. Chest 36. Gastro-intestinal 21. Gall bladder 21. Teeth 19.

REFERS TO OTHER DEPARTMENTS

The 218 patients were given a total of 391 refers to the different departments as follows: Dentist 73. Surgery 62. Eye 61. Dermatology 43. Ear, Nose and Throat 38. Physiotherapy 36. Gyn. 24. Psychiatry 17. G. U. 13. Cardiology 13. G. I. 11.

COMPLICATIONS

The 218 patients presented 580 complications, as follows:

1.	Obesity	83
2.	Hypertension	76
3.	Dental Caries	73
4.	G. I. and G. B.	53
5.	Arteriosclerosis	46
6.	Pyogenic Inf.	42
7.	Rheumatism and Neuritis	40
8.	Infected Tonsils	34
9.	Varicose Veins	25
10.	Respiratory Inf. not Tbc.	19
11.	Ketosis	15
12.	Cataract	15
13.	Heart Disease	14
14.	Thyroid Disease	12
15.	Menopause	10
16.	Syphilis	10
17.	Gangrene	9
18.	Nephritis	6
19.	Pulmonary Tbc.	3
20.	Ca. of Pancreas	1

The younger patients had few complications, the older patients, and especially those who had not been under proper management, had many complications.

DIAGNOSIS

An attempt was made to make an etiological diagnosis in each case according to the underlying complications and the response to treatment. Our diagnosis in these 184 cases was as follows:

72 cases, or 39.2 per cent, had diabetes due primarily to obesity.

46 cases, or 25 per cent, had diabetes due primarily to arteriosclerosis.

40 cases, or 21.8 per cent, had diabetes due primarily to pancreatic insufficiency.

10 cases, or 5.4 per cent, had diabetes due primarily to cholecystitis and pancreatitis.

8 cases, or 4.3 per cent, had diabetes due primarily to syphilis.

5 cases, or 2.7 per cent, had diabetes due primarily to thyroid disease

3 cases, or 1.6 per cent, had diabetes due primarily to pregnancy.

A diagnosis of diabetes due primarily to obesity was made in those cases that showed a definite gain in tolerance on a reduction to

normal weight. There were 10 obese patients in which obesity was not thought to be the most important factor in the etiology.

A diagnosis of diabetes due primarily to arteriosclerosis was made in 46 cases. These cases were all mild elderly diabetics whose diabetes came on in the later years of life, who had very definite sclerosis of the vessels and whose only other complications were those due to arteriosclerosis.

A diagnosis of diabetes due primarily to pancreatic insufficiency (hypoinsulinism) was made in 40 cases. This is something like saying idiopathic diabetes, or in other words, we were not able to determine the causative factor in these cases. Nervous and mental strain appeared to have a definite bearing on many of them.

A diagnosis of diabetes due primarily to cholecystitis and pancreatitis was made in 10 cases. There was marked improvement in carbohydrate tolerance following treatment of biliary tract infection. Four of the cases had stones and were treated surgically, the other six were not operated, but cleared up under medical treatment. It is possible that many obese diabetics have unrecognized biliary tract infections that clear up on a reduction diet.

A diagnosis of diabetes due primarily to syphilis was made in 8 cases. These were all cases who had had syphilis for several years before the diabetes developed and who showed a marked gain in tolerance on antiluetic treatment.

A diagnosis of diabetes due primarily to hyperthyroidism was made in 5 cases. In all these cases the basal metabolic rate was considerably elevated. In 3 of these cases there was improvement in carbohydrate tolerance following thyroidectomy, and in one of the 3 cases the patient was able to take a full diet. In the other 2 cases there was improvement in the diabetes following medical treatment of the hyperthyroidism.

A diagnosis of diabetes due primarily to pregnancy was made in 3 cases. In each of these cases the diabetes came on during pregnancy and in 2 cases cleared up following delivery. There has been no return of the diabetes in from 6 months to 3 years in these 2 cases.

DISPOSITION OF THE CASES

Seventy-nine, or 42.9 per cent, of these cases are still under active treatment in the clinic. Fifty-seven, or 30.8 per cent, are under treatment elsewhere. This includes cases that have been referred for private care, those who are attending other clinics, and those who have left the city.

Forty-one, or 22.5 per cent of these cases were discharged due to lack of coöperation. We feel that it is useless to spend time and money trying to help people who will make no effort to help themselves.

Seven, or 3.8 per cent, of these cases are deceased.

CAUSE OF DEATH

Gangrene 2. Coma 2. Apoplexy 1. Ca. of pancreas 1. Senility 1. The patients who died in coma were both elderly hypertensive arteriosclerotic diabetics who had never given good coöperation. They were taken to the hospital in coma. One of these cases was operated for cancer of uterus ten years previously. There was no autopsy. The case of senility was an arteriosclerotic diabetic, age 75 years. The case of carcinoma of the pancreas was demonstrated by exploratory laparotomy.

All of these seven deaths occurred in arteriosclerotic diabetics over 50 years of age. All of these patients were predisposed to death. It would not be fair to say that the diabetes was more than a predisposing cause in any except the 2 cases who died in coma. However, under our present system of recording deaths, diabetes is given a prominent place as the cause of death in all these cases. This is obviously an error and gives the impression that the death rate from diabetes is higher than it actually is.

CONCLUSIONS

There is a need for diet kitchen service for ambulatory patients. Under the present conditions in our kitchen 8 to 10 patients at a charge of $8.75 per week will completely cover all expenses. In our group of cases diabetes is definitely a disease of middle and later life.

One hundred sixty-one cases were mild or moderate, while only 23 cases were severe. Sixty-four per cent of the cases had had diabetes for more than 2 years before coming under our observation.

The response to diet and insulin depends upon the etiological factors involved and to an equal degree upon the coöperation of the patient. Obesity, hypertension and dental caries are the leading complications of diabetes in this series of cases. Young dia-

betics show fewer complications than the elderly group, where the diabetes itself may often be considered a complication of arteriosclerosis. Obesity and arteriosclerosis are considered the most important etiological factors in this series.

This death rate of 3.8 per cent (7 cases) does not apply to the whole 184 cases for 4.5 years. It applies to 79 cases for 4.5 years and to 105 cases for a period from 2 weeks to 4.5 years. There were no deaths in the young and middle-aged group in this series. All of the 7 deaths occurred in elderly arteriosclerotics in which the diabetes was a complication. In only 2 of these cases was diabetes an important contributory factor.

A diabetic must some day die of something, and just as surely as this is going to happen the death will be charged to diabetes mellitus.

224 BLVD. TEMPLE BLDG.

RETINAL TEARS AT THE ORA SERRATA*

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Looking critically at the ophthalmological world since the day *Gonin* published his first results with the ignipuncture, one can not help noticing a certain degree of confusion which in itself proves the greatness of *Gonin's* discovery, as history shows that every great discovery has thrown the world into confusion. If we try to analyze its causes we shall readily make the conclusion that it is the inconsistency of the results which is so upsetting to many ophthalmologists. The causes for the inconsistency are bound to be inadequacy of the particular case and inadequacy of the surgical technic. These are the two points which were discussed at almost every meeting during the last four years and in numerous publications.

Although many of us agree that the *Gonin* operation is the method of choice in many types of retinal detachment, we all know that some cases of retinal detachment do better or would have done better without the ignipuncture. Many of us have had this unfortunate experience which consisted either[1] in sudden loss of macular vision where it had been normal before the operation, or[2] in a rapid progression of the retinal detachment immediately after the operation. A third possibility is the occurrence of severe intraocular hemorrhages immediately after the ignipuncture or a week later.

These are the reasons why German authors (*Axenfeld, Elschnig, Wessely*) especially are stressing the point that certain cases of retinal detachment do fairly well without surgical interference. It is well known that a partial detachment may form firm chorioretinitic adhesions at its boundaries, the striæ retinales, which will prevent a further extension of the detachment and my ultimately lead to its complete spontaneous reattachment. This type of retinal separation is rare, as we all have experienced, but it occurs, should be recognized as such, and left alone. It requires at least a period of several weeks before this natural tendency of a detachment to heal can be detected. If after a few weeks the detachment has not shown any signs of improvement, the unanimous opinion usually is to operate. If a retinal tear is visible, the *Gonin* operation is probably the procedure which most of us would resort to. In *Gonin's* publications it is made very clear that the duration of a retinal detachment is one of the most important factors which determine the prognosis of the disease. The period of observation, therefore, must be reduced to a minimum and we should learn the art of prophecy in order to be able to tell how a particular case of retinal detachment is going to behave. Since retinal detachment is only a certain type of pathological response to many different causes and not a pathological entity, we should attempt a classification of the various sorts of detachment. *Gonin* deserves the world's gratitude for having drawn our attention to an almost forgotten

*From the Eye Clinic of the University of Chicago, Dr. E. V. L. Brown, Director. Read before the section on ophthalmology, 111th annual meeting of the Michigan State Medical Society, at Pontiac, September 23, 1931.

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feature of retinal detachment, namely, the tears and holes in the retina. It is not my intention in this paper to discuss the rôle which the tears play in the mechanism of retinal detachment, whether they represent the last cause of the detachment or whether they occur after the detachment has taken place. I only want to use the tears as the criterion of classification, hoping that this procedure may lead to a useful scheme either for practical or theoretical purposes. *Gonin* has found that the large majority (85%) of tears lie in the anterior segment, around or anteriorly to the equator. He furthermore states that 10% of all tears lie at the ora serrata or its immediate neighborhood.

He uses the term "ora serrata conventionelle" as a synonym for the limits of the ophthalmoscopic field after maximal dilation of the pupil as suggested by *Amsler* and *Dubois*. That boundary almost coincides with the anatomic ora serrata on the temporal side and lies from 1 to 2 disc diameters posteriorly to it on the nasal side. The use of the words "ora serrata conventionelle" for the limits of the ophthalmoscopic field seems permissible because the lesions discussed in this paper lay in the temporal halves of the globes where the two boundaries almost coincide.

This type of retinal detachment will be dealt with exclusively in this paper, giving the experiences which I and my colleagues at the University of Chicago had with seven cases falling in this group. All of the cases of this type have in common that the tears were easily accessible and that the surgical procedure was comparatively easy. This fortunate quality could not make up for the difficulties encountered when we tried to find the tears.

The tears in the neighborhood of the ora serrata are difficult to see and still more difficult to observe as to their response to surgical procedures. They either represent real holes, as everywhere else in the fundus, or in this situation separations between the retina proper and pars ciliaris retinæ (Figs. 1 and 2). The latter condition was apparently described first by Theodor *Leber* in 1882 and called "Abreissung."[3] *Gonin* in his address of the Société francaise d'Ophthalmologie in 1920 speaks of *ruptures at the ora serrata.* Later on French authors named it "desinsertion," *i.e.,* partial loss of the insertion at the ora serrata. In a German paper *Amsler,* Gonin's associate, used the term "Retinodialysis,"[4] which represents probably the best English word for this condition, although the term avulsion is in use also. *Gonin* dealt with it specifically in a paper, "Les désinsertions de la rétine," which he read at the 43d meeting of the Société francaise d'Ophthalmologie in 1930. This paper contained *Gonin's* observations on 25 patients with retinodialyses which he found in his first series of 240 cases with retinal detachment.

Some of his conclusions are:

Tears at the ora serrata are very easily overlooked even by experienced ophthalmologists. They were most likely present in those cases in which, despite clear media, even *Gonin* himself could not figure out how "the fluid of the vitreous spread behind the retina."

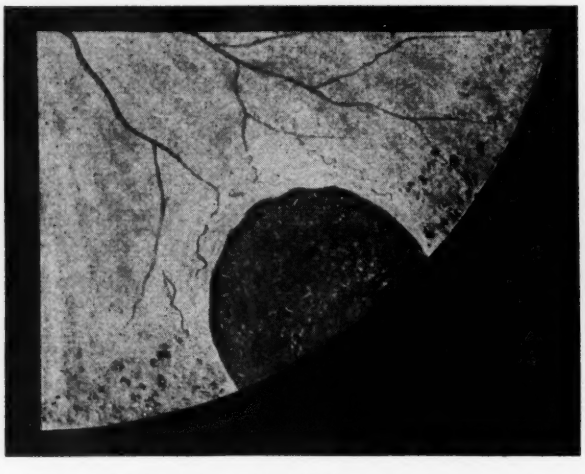

Fig. 1. Semicircular retinodialysis (retinal tear at the ora serrata), after Arruga.

Fig. 2. Two small retinodialyses after Arruga.

Retinodialysis cannot be sealed by one ignipuncture. A whole series of chorio-retinal scars is necessary to fix the retina in its normal position.

The result of repeated operations very often is the persistence of retinal folds and imperfect reattachment in the macular region; this accounts for metamorphopsia and permanently impaired vision.

Retinodialysis is the result of traction on a very extensive adhesion between vitreous and retina. Therefore, the closure of one rupture is very frequently followed by the formation of a secondary tear and further spreading of the detachment.

Prospects in cases of retinodialysis are particularly bad. Among 15 cases treated surgically *Gonin* accomplished complete reattachment (guérisons complètes) in four cases and partial reattachment without further impairment (arrêt de décollement, guérisons partielles) in three cases; this is a smaller proportion than in the other forms of retinal detachment. Although the localization of the rupture need not be done with great accuracy the retinodialysis presents no opportunity at all for a beginner "qui compte sur un succès clinique pour affermir sa confiance dans le traitement du décollement rétinien par la thermoponction."

Gonin's associate, M. *Amsler*, mentions the cases of retinodialysis among those in which the ignipuncture is contraindicated. He believes that in those cases pathologic changes of the vitreous play the predominating rôle. He operated upon four patients with ruptures below and temporally—they were all young emmetropes—without any success. He concludes that he probably would not attempt ignipunctures in further cases of this type.

Arruga had four eyes with tears at the ora serrata in the series of 33 cases which he reported before the XIIIth Concilium ophthalmologicum in 1929. He apparently got satisfactory results in both eyes of one patient (RV = 0.5 [after 1 ignipuncture] LV = 0.2 [after 2 ignipunctures]) while in the other two cases the final vision was only fingers at one and ½ meters and 0.1.

Fortunately, I did not know of *Gonin's* and *Amsler's* bad experiences when I saw my first patient of retinodialysis. My results have been encouraging and this is the main reason why I am presenting them, although my series is comparatively small and the period of observation since the last operation relatively short. During the course of the last year I have seen seven cases with retinodialyses at the University of Chicago Eye Clinic. The following report is based upon my experiences in those seven cases.

Fig. 3. The electric cautery (natural size).

TECHNIC

The technic was practically the same in all seven cases, namely, *Lindner's* modification of *Gonin's* method.[5] The localization was always attempted with a Gullstrand Ophthalmoscope on which a perimeter arc was mounted. The patient was asked to follow a little electric globe, which was moved in a carrier along the arc, until the center of the tear appeared in the center of the ophthalmoscopic field. This method is not very accurate when it is used to localize tears in the extreme periphery; besides, it is rarely possible to see tears near the ora serrata with the Gullstrand. The motility of the patient's eye in that particular direction must be exceptionally good to make the central edge visible. The meridian, however, can nearly always be determined with sufficient accuracy. In figuring out the location of the proximal edge of the tear, I usually followed *Gonin's* method and measured the distance from the central edge of the tear to the limit of the ophthalmoscopic field. I always used the electric cautery to perforate the sclera and to cauterize the choroid (Fig. 3) and I followed *Lindner* inasmuch as I always left the cautery inside the eye for from 8 to 12 seconds. I always aimed at the central edge of the dialysis.

THE CASES

Table I contains the most important data concerning my seven cases. The positions of the dialyses can be found in Table II. The detail description of the findings before the operation and of the postoperative behavior of the eye is of great importance and will be published at a later date.

In Case 5 the reader finds a question mark after the words "complete reattachment."

TABLE I

No., name, sex and age	Cause or predisposing factor; refraction	Portion of retina detached	Duration before operation	No. of operations	Results	Period of observation since last operation	Change in vision
1. J. R. male, 18	trauma; +1.25 +1.25cx90	lower temporal half	3 weeks	4	complete reattachment	9 months	0.6–3 to 0.6 3
2. W. T. male, 25	trauma; approx. emmetropic	lower temporal half	4 months	1	partial temporary reattachment; pat. refused further operations		Fingers at 10 feet to 0.1
3. E. P. female, 26	old chorioretinitic lesions in and around area of dialysis; +1.25 +0.75cx45	lower temporal half	at least 2 months	3	complete reattachment	13 months	0.6–2 to 1.2–2
4. J. O. male, 55	old chorioretinitic lesions in and around area of dialysis; +1.50 +0.50cx30	lower temporal half	5 months	3	complete reattachment	10 months	Fingers at 3 feet to 0.3
5. E. F. male, 27	old chorioretinitic lesion, traumatic detachment in the other eye; +4.50 +0.50cx90	lower half	3 weeks	1	complete reattachment (?)	7½ months	0.3 to 0.4
6. F. Z. female, 15	unknown; —0.25 —0.25cx180	lower half	3 weeks	1	partial temporary reattachment; later almost complete redetachment		0.4 to Fingers at 3 feet to 0.4
7. G. Z. male, 46	trauma; approx. —1.00	upper temporal half	2 months	2 (1 post. sclerotomy)	slight progression of detachment	8 months	20/40 to 20/100

The lower half of the retina was detached in this case and one large dialysis was found in the neighborhood of the vertical meridian. Besides there were several small round "punched-out" holes in the retina around the large dialysis. The latter was seared by one ignipuncture. The smaller holes remained open and after two months are still visible near the limit of the ophthalmoscopic field. The retina around them is white and I am not certain whether this small area which measures about 3-4 P Ds in every direction represents just edema or edema plus detachment. During the last 7 months no change in the field or in the ophthalmoscopic picture has been noted in this case.

The results obtained in my small series may be discussed under the following headings:

1. Topographic relation between tear and detachment.
2. The rôle played by the tears in the mechanism of these cases.
3. The etiology of the detachment in our cases.
4. The "best surgical procedure."

(1) The topographic relation between the retinodialysis and the detachment seems to be a very regular one in my patients. If one wants to express this relation in geometrical terms, it looks as though the tear nearly always lies in the axis of symmetry of the detachment. By drawing this axis in the field chart one should strike the tear. Table II shows this for our seven cases.

These figures seem to allow conclusions as to the most probable position of the retinodialysis if one cannot find it immediately. They also show that the detachment in these cases does not spread quite as much above the horizontal meridian as the law of symmetry would require. Dialyses in the upper half of the fundus do not follow that rule and are usually located very near the upper border of the detachment. These facts certainly speak in favor of the hypothesis that there is a very intimate relationship between retinal tear and detachment.

(2) Cases 1, 3 and 4 permitted very accurate studies of the relation between the dialysis and the detachment. In each of them it was observed that the detachment persisted as long as the proximal edge of the dialysis was not completely and firmly adherent to the underlying choroid. In Case 5, there are still a few small holes open

TABLE II.—THE TOPOGRAPHIC RELATION BETWEEN DETACHMENT AND DIALYSIS

Patient	Extent of detachment in radii	Geometric axis of detachment radius	Extent of dialysis in radii	Geometric axis of dialysis radius
1.—J. R.	200–15	290	275–320	295
2.—W. T.	195–30	290	280–290	285
3.—E. P.	145–330	235	200–250	225
4.—J. O.	225–45	315	295–335	315
5.—E. F.	180–360	270	265–275	270
6.—F. Z.	180–360	270	250–270 appr.	260

which, however, lie in the immediate neighborhood of a firm artificial chorioretinal adhesion. In Case 2 the dialysis was missed and merely an adhesion was produced about 3 P D from the tear, resulting in only a temporary improvement.

I do not know why Case 7 did not respond at all to the closure of his dialysis, which was done lege artis as far as I know. There is, however, the possibility that one or two smaller dialyses are still present, although I spent many hours looking for them and made extensive use of the method of *Trantas* also.

These observations seem to confirm the theory that the closure of the tear is the most essential feature in the surgical treatment of retinal detachment.

(3) In three of the seven cases a definite relation between direct blunt trauma to the eye and the occurrence of the detachment could be established. The development of a retinodialysis is easily understood in these patients. In two of the four spontaneous detachments signs of a pathological process in the choroid were visible. The remaining two patients have to be put in the group of idiopathic detachment, although I believe that symptoms of a chorio-retinal disease could have been detected if our methods were more perfect or my patience had lasted longer. About the various diseases of the fundus which may finally cause a retinodialysis I want to be very brief and am just mentioning them:

1. The cystic degeneration of *Blessig.*
2. The peripheral chorioretinitis of *Meller-Pressburger.*
3. The peripheral fundus degeneration of the myopic or senile type of *Vogt-Rehsteiner.*
4. Periphlebitis tuberculosa as suggested by *Gonin.*

Clinically it is often difficult to distinguish between lesions of Type II and Type III. Judging from the age of the patients, we were most likely dealing with inflammatory lesions in Cases 3 and 5, and with a degenerative process in Case 4.

(4) As stated by *Gonin* and confirmed by *Arruga* and myself, the large retinodialyses require several operations, which is very unpleasant for the doctor and the patient. I have, therefore, often been advised to cauterize larger portions of the proximal edge at once in order to shorten and simplify the therapeutic procedure. I have been advised to use a larger cautery and to introduce it along the edge of the dialysis. In view of *Gonin's* statement concerning the frequency of secondary tears in these cases I am more in favor of my method which leads to point-shaped adhesions of the retina and allows the latter to adjust itself better than if we produced extensive adhesions in one session. Those broad synechiæ are more likely to pull the retina into a faulty position than narrow point-shaped adhesions. I believe that I am right in saying that the method used in my cases has proven to be successful in a large percentage of cases and is therefore a proper and adequate method. In cases with tears at the ora serrata one has to choose between this method or the new "Abriegelung's" operation of *Guist* and *Lindner* (*Graefe's* Archiv. 1932). These authors have given up the heat cauterization altogether and are using a chemical agent, dry potassium hydroxide applied to the external surface of the choroid. The diseased torn area is surrounded by a row of chemically cauterized areas of choroid which produce a line of firm chorioretinal adhesions. Thus the diseased portion of the retina is walled off and separated from the healthy tissue. *Lindner* and *Guist* have had better results with this new method than with the electric cautery. The main difference seems

to be that the new method does not forcibly bring the retina into any position. It is left up to the natural and endogenous forces in the retina to resume its normal position. Those of us who have more confidence in the cautery than in any new caustic agent, should learn from the good results of the *Lindner-Guist* operation that it is mainly the choroid which we want to stimulate and to irritate, and have to avoid direct effects on the retina as much as possible. A pointed cautery which is not inserted too far into the eyeball will do that better than a large red hot surface. I believe that several cauterizations with the small cautery are much less dangerous than one very extensive and intensive one which does not allow the natural forces to adjust the position of the retina.

SUMMARY

Seven cases of retinal detachment with tears at the ora serrata (retinodialysis) were carefully studied and operated upon, following the method of *Gonin-Lindner*. Complete and lasting reattachment was accomplished in four of these seven cases.

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DIFFUSE HYPERTROPHY OF THE BREASTS*

PRELIMINARY CASE REPORT

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Massive enlargement of the female breasts has been reported in the literature, at rare intervals, since authentic medical anomalies have been recorded. This condition has been commonly classified as "diffuse hypertrophy."

As early as 1669, Durston[1] reported a case of hypertrophy of the breasts causing sudden death. At postmortem, it was found that the left breast weighed 64 pounds and the right, 40 pounds. Borellus[2] in 1676 stated that he had knowledge of a woman of ordinary size, each of whose mammæ weighed about 30 pounds and that she supported them in bags hung about the neck. The faculty at Montpelier[3] in 1878 presented a most interesting case developing at the age of 15. The increase in size of the breasts was rapid. The circumference of the right breast was 94 cm. and of the left, 105 cm.; the pedicle of the former measured 67 cm. and of the later, 69 cm. It is of further interest to note that this enlargement remained constant for several years. Then at the age of 32, after three pregnancies, the hypertrophy had diminished to such a degree that the circumference of the right breast was but 27 cm. and of the left, 33 cm.

More recent medical literature contains case reports of diffuse hypertrophy of the breasts by Ghosh,[4] Plummer,[5] and Olivella.[6]

The case which we wish to present before this Obstetrical and Gynecological Section today is one of a sudden massive hypertrophy of both breasts during the early months of pregnancy.

*Read before the Section of Obstetrics and Gynecology of the Michigan State Medical Society at its annual meeting in Pontiac, Michigan, September 23, 24, 1931.

Mrs. T., age 21, became pregnant for the first time during the latter part of January, 1931. In the early weeks, there was a slight fullness of the breasts accompanied by some tenderness. No marked increase in size was noted until the beginning of the third month, when, within a period of three weeks, an enormous enlargement took place. This enlargement of the breasts was not accompanied by any untoward symptoms. The only complaint came from the discomfort arising from their huge size. The left breast measured 26 inches in circumference; the right, 25.5 inches. From the base of the left breast to the nipple was 15.5 inches; the length of the right, 17 inches. Within this three weeks, the total body weight had increased from 116 to 152 pounds—a gain of 36 pounds. However, the patient insists that during the increase in size of the breasts, the rest of the body had become thinner; especially was this true of the arms and legs. It would be a conservative estimation that the breasts had actually gained over 40 pounds within this three-week period.

The breasts, unsupported, hung down over the abdomen as two huge edematous masses. The skin was coarse, thickened, from the tremendous increase in size. The breast tissue would pit upon pressure and deep markings appeared where an uplift binder had attempted to give relief from the excessive weight. Examination revealed no definite palpable masses. Pain and tenderness were absent even upon deep pressure. The only sign of an embarrassed

venous circulation appeared over the sternum, where a network of veins were found engorged.

General physical examination revealed no apparent effects from this sudden massive hypertrophy. The pulse rate was 78. The blood pressure 116/74. The left border of the heart was but slightly outside the mid-clavicular line. There were no valvular murmurs. Except for tiring easily, the patient insisted that she had never felt better.

Fig. 1.

Fig. 2.

After the three weeks period of excessive growth of the breasts, further enlargement ceased as suddenly as it began. Over four months have now passed without any appreciable change in their size or shape. Our patient is, at this writing, approximately 8 months pregnant. Questioning whether fetal deformity accompanied this anomaly, X-ray examination was advised. Dr. Carl H. Chapell submitted the following report: "Examination of the abdomen by Potter-Bucky technic, in the antero-posterior, lateral, and postero-anterior positions, shows a fetal outline of about eight months. It is in the transverse position, the head extending above the crest of the right ilium, and the buttocks in the left iliac region. The bones of the head are plainly marked and normally calcified, also the vertebræ, ribs and extremities. The level of the uterus is at the first lumbar vertebra; probably a normal amount of fluid. In none of the examinations are any pathological changes seen in the bones of the maternal pelvis, vertebræ, or ribs which are shown. I believe this to be a normal transverse position of about eight months duration."

The causative factor in sudden diffuse hypertrophy of the breasts remains one of conjecture. Amati,[7] Laqueur,[8] and Parkes[9] have reported interesting experimental results which suggest that certain hormones have a definite part in the development of the breasts. Graves[10] is of the opinion that, "there is no doubt that changes in the mammary glands are due to the circulation in the blood of some chemical substance which represents a true hormone." The ovary, the corpus luteum and the placenta have all been suggested as the source of this hormone. A rapid and pronounced hyperplasia has been produced in the breasts of rabbits after placental injection. R. T. Frank believes that the placenta may act merely as a storage reservoir for the active principle elaborated by the corpus luteum during the early part of pregnancy, calling attention to the fact that the corpus luteum during the latter half of pregnancy is an involutionary, functionless organ. Laqueur states that the ovary is responsible for this hormone which he has named "menformon."

As to the type of hypertrophy which these breasts show, Babcock[11] lists two varieties: "A"—Fibro-epithelial; "B"—Adipose (rare). He further states that this condition is not one of true hypertrophy but a great overgrowth of fibroconnective, myxomatous tissue.

In our one case, we await with interest the changes in the breasts during the puerperium. We feel that operative measures should be considered only when the degree of normal involution is evident.

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PIGMENTATION AND KERATOSIS FOLLOWING THE USE OF ARSENIC

REPORT OF A CASE

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Protocol: A. D., female, married, age twenty-one, was referred to me for diagnosis and treatment.

Family History: Both parents living and well.

Past History: Very little can be elicited save for occasional "colds"; tonsillectomy during early youth; teeth apparently in normal condition. A child was born prematurely at 8 months, three years ago. Serologic examinations however were consistently negative. The patient suffered from recurrent psoriasis for the last ten years.

Present History: Primary Inspection: The entire body is covered with silvery mother-of-pearl scales, which when removed disclose glistening membranes and bleeding points; the dermatosis is more marked on the extensor surfaces of the extremities and also at the hairy margin of the scalp. The diagnosis is obviously *psoriasis*. At this juncture I wish to state that the patient was in the habit of taking Fowler's solution steadily for at least 8 years, as this seemed to alleviate the dermatosis. It was not done on the advice of a physician, however, but of her own accord, since the lesions readily responded to its use. A serological test proved negative and the blood picture was normal. Urinary examination negative.

Terminal Inspection: Interspersed between the psoriatic lesions may be observed papular and lenticular keratoses and numerous papillomatous excrescences, especially more pronounced on the palms of hands and soles of feet and from 1 to 3 cm. in thickness. Concomitantly there exists an intense *brown pigmentation* throughout the entire body, especially more appreciable on the face, which on first sight gives the patient the appearance of belonging to colored stock, although by nationality and race she is a Slovakian and pure Caucasian. She noticed this pigmentation and keratosis about 3 three years ago, which has gradually increased in intensity. Her blood pressure is 85 systolic; diastolic not audible.

Dermatologic literature has repeatedly shown the ill effects of the continuous use of arsenical preparations; it is therefore not necessary to quote extensively different authorities who have pointed out this complication from the injudicious and prolonged use of arsenic. They have likewise stressed the grave possibility of malignancy that in certain instances superimposes itself upon the original keratosis. Norman Walker of Edinburgh has encountered a number of such cases. It is deplorable that our modern textbooks on Dermatology have very little to say about arsenical hyperpigmentation and keratodermia. It is superfluous to say that the *prognosis* in such cases is highly problematical.

In this case sodium thiosulphate was used empirically; so were intramuscular injections of bismuth salicylate; the latter was used not so much for influencing the keratosis, but with the hope of affecting the psoriatic process. The soles and palms were exposed to dermunits of X-ray with no appreciable result whatsoever. Within the month wherein the patient was under my observation nothing whatsoever was accomplished, and the patient, impatient for immediate and startling results, left me precipitously. Nor do I think there is any therapeutic measure that would extend any hope for relief of this dermatosis. It is essential, however, to bear in mind that the ultimate prognosis as far as malignancy is concerned is rather unfavorable.

SUMMARY

1. The continuous and unguarded use of arsenic in dermatology may lead to hyperpigmentation and keratodermia.

2. Its ultimate consequence may be of a malignant character.

3. No therapeutic measure is known that promises a restitution to the normal.

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†Dr. Aronstam is a graduate of Michigan College of Medicine, 1898. He did post graduate work University of Berlin 1907; practiced limited to Dermatology and Syphilology. He was formerly Professor of Dermatology, Michigan College of Medicine; is a member of the Medical Authors' Association, and received honorable mention at the International Congress of Hygiene, Dresden, Germany, 1912.

PNEUMONOCONIOSIS IN IRON MINERS

George B. Lawson, W. P. Jackson and J. E. Gardener, Roanoke, Va., emphasize that operators of air drills working four or five years in an atmosphere heavily laden with iron ore and silica dust may develop distressing symptoms of lung fibrosis after they have discontinued mining and have lived from four to eight years in apparently good physical and hygienic conditions. The fact that such operators at the time of their retirement from years of exposure to iron and silica dust have no symptoms may have but little bearing on the future progress of their disease. This form of lung fibrosis is not merely a cumulative action of dust but is a result, a stage of the disease which requires for its development a certain amount of time after the heavy inhalation of dust. This marked secondary fibrosis is comparatively rapid in its development.—*Journal A. M. A.*

BRAIN ABSCESS AND LATERAL SINUS THROMBOSIS AS A COMPLICATION IN MASTOIDITIS*

REPORT OF TWO CASES

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The first case reported is presented because of the multiple complications encountered.

Case 1.—C. A., female, fifty years old. She was first seen June 19, 1928, when she complained of pain in the right ear. The patient had had pain and discharge in the right ear for eight days as well as some fever, but no chills. She had a severe throbbing pain in the head for one day and had been unable to sleep for two or three nights. Examination revealed a temperature of 100.5 and the patient appeared sick. There was some discharge from the right ear through a small central perforation and the pus was pulsating. There was marked tenderness over the tip of the mastoid process. The general examination otherwise showed nothing of importance. The white blood count was 6,330; polymorphonuclear, 68 per cent. The X-ray showed both mastoids well developed and a pneumatic type of mastoid in which the cells were clear and showed no pathology. A diagnosis of acute mastoiditis, right, was made.

The following day a simple mastoidectomy was done. There was nothing unusual except that there were several cells broken down at the tip and a small abscess over the lateral sinus plate. The remaining cells showed little destruction. A culture made from the right mastoid showed hemolytic streptococcus.

By the second day after the operation there was a marked cellulitis of the neck. This gradually subsided, but the temperature varied from 98 to 102 or 104 degrees each day for the following eight days. A blood culture taken three days after the operation showed hemolytic streptococcus, eight colonies per c.c. of blood. A blood culture taken seven days after the operation showed one colony per c.c. of blood. On the sixth day after the operation the patient was seized with sudden dyspnea, cyanosis and pain in the left subscapular region. A chest consultation was called and a diagnosis of possible pulmonary embolus was made. Three days after the operation the white blood count was 9,150, and seven days after the operation it was 11,500.

Nine days after the mastoidectomy, the right lateral sinus was opened. There was a localized abscess within the lateral sinus with a thrombus on each side. The thrombus was removed and the sinus packed with gauze after a good flow of blood had been established. Three days after the ligation the blood culture showed seventy colonies per c.c. of blood. Two days later an abscess formed in the neck at the site of ligation. Fourteen days after the ligation an abscess in the left leg, anterior tibial region, was incised. Four days later, an abscess in the same location on the right leg was incised. A culture from each abscess showed hemolytic streptococcus. A blood culture made twenty-seven days after the mastoidectomy and eighteen days after the jugular ligation, was negative. The patient was given three transfusions of 500 c.c. of blood each. The red blood cell count improved from 3,930,000 at the time of jugular ligation to 5,100,000 on discharge from the hospital thirty-five days after the mastoidectomy.

The complications which followed the mastoidectomy were: cellulitis of the neck, hemolytic streptococcus, septicemia, pulmonary embolus, lateral sinus thrombosis, abscess in the neck at the site of ligation of the jugular vein and metastatic abscesses of both legs. In reviewing this case one wonders what would have happened if a mastoidectomy had not been performed. On the other hand, there must have been carious bone over the lateral sinus at the time of the mastoidectomy and removal of this might have prevented the thrombosis. Also, the abscess in the neck might have been prevented if the vein had not been cut betwen the ligatures.

In making a diagnosis of any case of lateral sinus thrombosis there are definite signs and symptoms for which one looks. The most important is bacteriemia, accompanied by a septic temperature and an increasing blood count, usually near 20,000. The cerebral circulation is disturbed; headache, nausea or vomiting may be present. Optic neuritis is present in about twenty-five per cent of the cases. The spinal manometer will show increased pressure, approximately 200 to 250 mm. If pressure be made over the jugular vein of the occluded sinus there will be no change in the cerebral pressure. But when pressure is made over the jugular vein of the free sinus there is a marked and rapid increase in pressure. This, of course, is very helpful in a case of bilateral mastoiditis with a questionable lateral sinus thrombosis. The common physical findings are tenderness along the mastoid vein at its point of entrance to the mastoid foramen. The point is about one and one-fourth to one and one-half inches behind the orifice of the cartilaginous meatus and on a level with its floor. The jugular vein may be sensitive to pressure and there may be noted some induration about the vein. The glands in front and behind the sternocleido-mastoid muscle may be enlarged. The sinus wall often shows adhesions between the wall and the overlying bone. The presence of fluid-pus in contact with the sinus wall may be found as well as granulations upon the wall and inflammatory changes without granulations. The moderate luster characteristic of the normal dura may be lost and the usual bluish-gray color changed to a somewhat purplish hue. Metastatic abscesses from septic emboli are fairly common in the sternum, wrists, elbows, knees and ankles. Septic pneumonia or septic endocarditis is not uncommon.

The treatment of lateral sinus thrombosis is immediate operation. The operation of choice by most otologists is removal of the clot and diseased sinus wall plus ligation of the jugular vein. However, if the jugular vein is thrombosed or evident phlebitis present, the resection operation is often done.

Case 2.—W. B., boy, eight years old. June third, the child complained of pain in the right side of his face and about the right ear. A dentist was consulted but nothing was found to account for the

*Read before the section on Ophthalmology and Otolaryngology at the 111th meeting of the Michigan State Medical Society, Pontiac, September 24, 1931.

†Dr. Wilkinson graduated from Johns Hopkins Medical School in 1923. He spent six years in post graduate training at the Henry Ford Hospital, specializing in eye, ear, nose and throat work. He is a Diplomate of the National Board of Medical Examiners; Certified by the American Board of Otolaryngology; Fellow of the American Academy of Ophthalmology and Otolaryngology; Fellow of the American College of Surgeons.

pain. Two days later the right ear began to discharge. The ear discharged for three days. For the next eight days nothing unusual was noted except an occasional headache. On the fifteenth day of the illness the child complained of an intense right temporal headache, vomited and had several convulsive seizures involving the left arm and leg. The child was taken to the hospital by the family doctor and an ear consultant was called who noted that there was slight mastoid tenderness; the right ear drum was bulging and a paracentesis was done. The diagnosis was acute otitis media. A spinal puncture was done and the fluid examination showed the following: Wassermann, negative; globulin, moderate increase; cells, three per cm. The X-ray of the mastoid showed that the cells on the right were more dense than on the left. The cell walls were indistinct and hazy. The child's temperature was 103 and his pulse rate was 120 on the fifteenth day of the illness. The following day the temperature dropped to 99 and the pulse rate to 90. The white blood counts taken on the seventeenth and twenty-first days of the illness were 16,500 and 11,400, respectively, with 79 per cent polymorphonuclears. The child went home six days after entering the hospital.

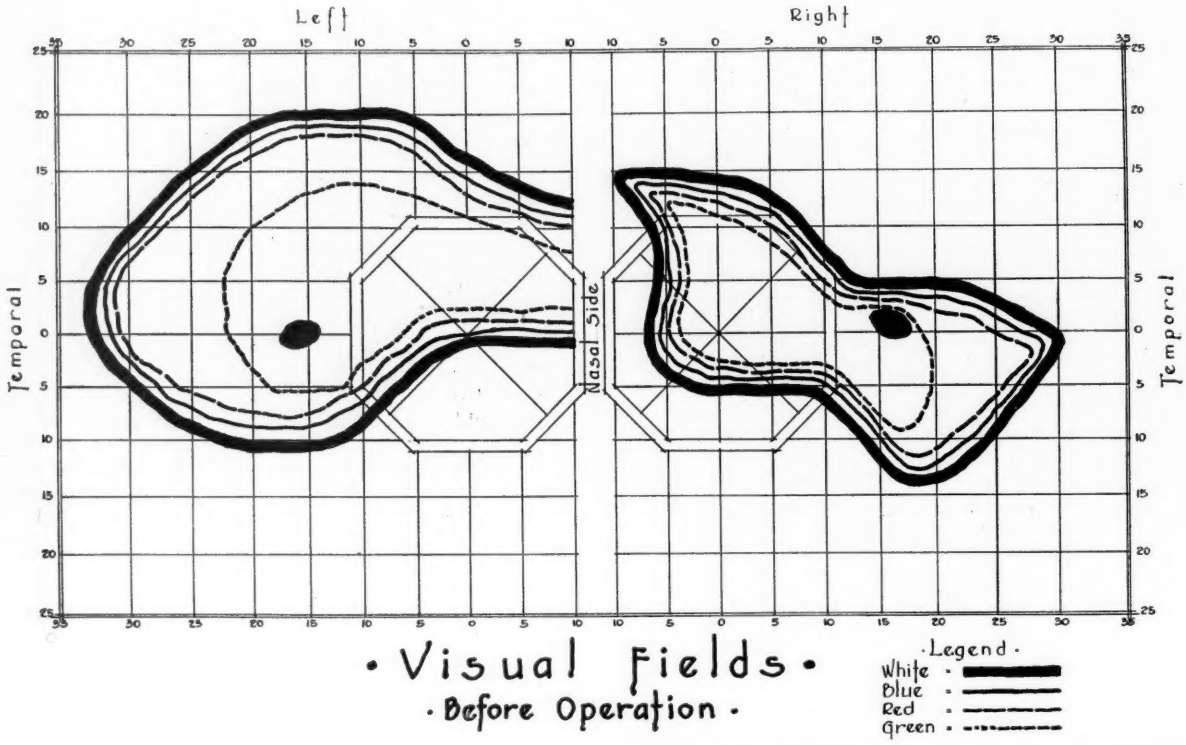

Fig. 1. Fields taken before operation showing bilateral indentations. The indentations are in the lower quadrants, which indicates that the abscess is high up and deep in the temporosphenoidal lobe.

I first saw this patient twenty-four days after the beginning of his first symptoms and nine days after the convulsive seizure. The child continued to complain of headache in the right fronto-temporal area and vomited at intervals. The vomiting was not described by the parents as projectile. The child was very irritable and would not coöperate during the examination. The examination showed him to be a well-nourished boy of eight, not particularly sick, with a temperature of 98.6 and a pulse rate of 120. The left ear appeared to be normal while the right showed dry blood in the canal and a slightly hazy drum. The hearing on the right was slightly impaired. The ophthalmoscopic examination revealed a papilledema of two diopters in the right eye and one diopter in the left. The veins were engorged. The visual fields showed lower hemianopic indentations as pictured in the accompanying diagram. The neurological examination revealed nothing unusual except slight weakness of the left hand. The white blood count was 16,000, with 72 per cent polymorphonuclear cells.

My diagnosis was mastoiditis, right, with a brain abscess of the temporal lobe. I advised a mastoidectomy and exploration of the brain abscess and operated on the twenty-sixth day of the illness.

The mastoid was sclerotic in type with granulation tissue in a few cells. The antrum was filled with granulation tissue. From the antrum upward there was soft necrotic bone destroying a portion of the dural plate. The dura did not have the normal glistening appearance. It was dull and reddened, but had no granulation tissue over it. The dura was exposed for about 2 cm. The wound was cleansed with peroxide and mercurochrome and the dura was incised. About one and one-half ounces of pus exuded when a trocar was inserted. The dura was then opened for about two cm. in length, a cigarette drain inserted and held in place by packing. The culture proved to be pneumococcus, Type I.

The post-operative care consisted of changing the drain every two days under gas anesthesia. The discharge was profuse for the first few days. The recovery was uneventful. The child's disposition completely changed to that of a very coöperative patient. On the fourth day after the operation the white blood count was 11,500 with 50 per cent polymorphonuclear cells; on the eleventh and sixteenth days after the operation the white blood count was 6,950 and 6,550, respectively. The patient did not complain of headache nor did he vomit after the abscess was opened. There was a gradual disappearance of the papilledema. Twenty-seven days after the operation the patient left the hospital

The visual fields did not return to normal for about three months. (Diagram.)

This case presents the following interesting facts: Temporary discharge from the ear followed by headache, vomiting and several convulsive seizures. There was no discharge from the ear when first seen by me, although paracentesis had been performed a few days before. The X-ray of the mastoid showed little pathology. There were very few general localizing signs. However, with the history of a discharging ear, a left side convulsion, persistent vomiting and headache, and the finding of choked disc and visual field defects, I felt that there were definite indications for mastoidectomy and exploration of the dura. The abscess was opened on the twenty-sixth day of the illness, and was quite large, containing one ounce and one-half of thick creamy pus. Considering the size of the abscess, I feel it would likely have proved fatal if the operation had been delayed any length of time.

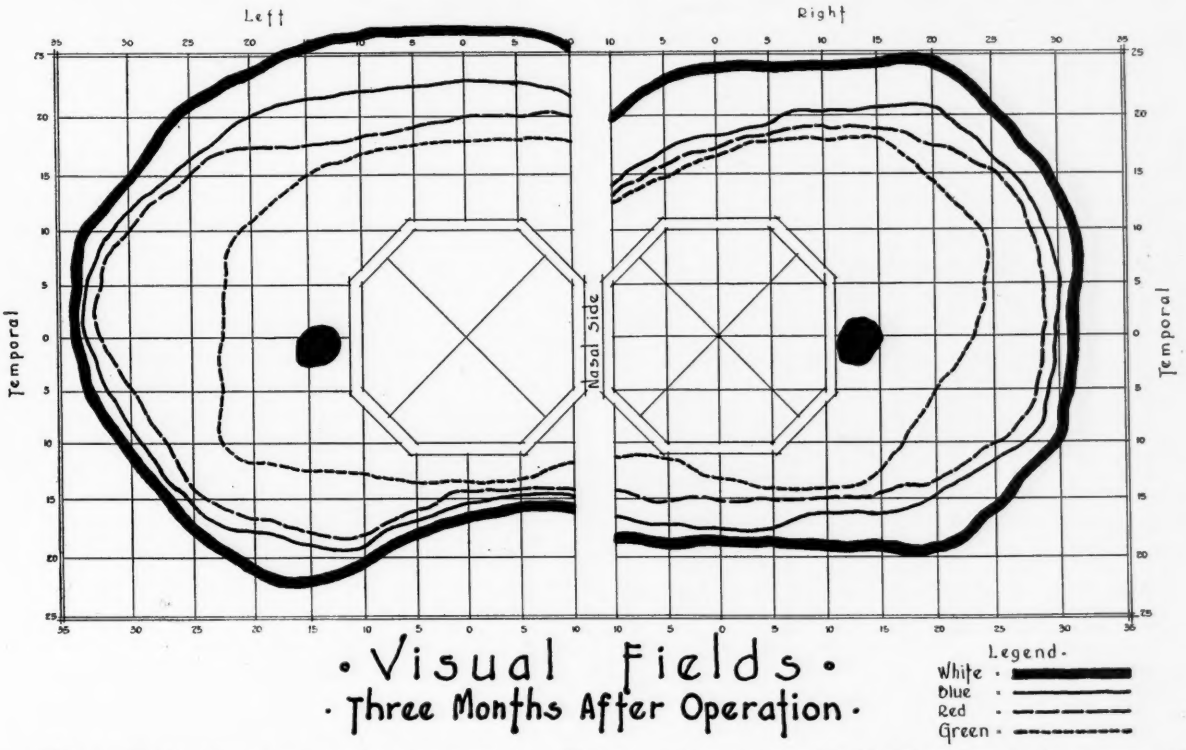

Fig. 2. Fields taken three months after operation. This shows how the visual field defects completely disappear if the abscess is evacuated early.

Let us consider brain abscesses in general. As for etiology, 75 to 85 per cent of all brain abscess cases are secondary to chronic suppurative otitis media. The great majority of cases are found in individuals from ten to thirty years of age. They are twice as common in men as in women. In 75 per cent of the cases the location of the abscess is the temporo-sphenoidal lobe. Next in order of frequency are the cerebellum and frontal lobe.

The organism most frequently present is the streptococcus. Pure cultures are found in 35 per cent of the cases. Diplococci and staphylococci occur in 5 to 10 per cent, and mixed infections in about 40 per cent of the cases. The infection may travel by direct extension through the tympanic or antral roof. An extra-dural abscess may be formed or there may be an erosion in the bony plate covering the tympanic vault and antrum. This gives rise to inflammatory changes in the adjacent dura and extends into the brain by the blood-vessels to the adjacent structures and cerebral arteries to the deeper substance of the brain, or by disintegration of the inflamed area. There may or may not be a capsule or limiting membrane about the abscess.

The first symptoms are usually a chill, followed by high temperature and severe headache. Vomiting may or may not be present. The patient may then feel fairly well or may have symptoms of increased intracranial pressure. The headache differs from that of the onset in that it is the excruciating type which causes the patient to cry out, often described as boring in type and usually worse at night. There is often insomnia; all sleep is fitful and easily broken. The temperature after the initial stage may be normal, or quite typical is a degree below normal to one or two degrees above normal. The pulse usually slows with the increase in the size of the abscess.

Cerebration is slow, difficult and retarded. Concentration is very difficult. Vomiting is rare after the initial stage is past. There is progressive rapid loss of flesh and strength and the appearance of grave illness out of proportion to any of the symptoms present.

Papillitis or optic neuritis may be present but is more common in slow growing brain tumors than with brain abscess. Whether papillitis is observed or not, visual field studies are very important and routine daily examinations should be made. When an indentation is definitely elicited, it is pathognomonic. In a spheno-temporal lobe lesion the indentation is always bilateral and is usually situated in the contralateral upper quadrant of the fields, because of the usual position of the abscess being low down, just above the tegmen where it compresses the lower subcortical fibers of Gratiolet. If the abscess is higher up and deeper, the indentations may be in the lower quadrants. Exceptionally, there may suddenly appear a complete contralateral hemianopsia from the pressure of a large abscess. The persistent absence of hemianopic indentations assists in excluding a tempero-sphenoidal lobe abscess. However, the general central edema that accompanies cerebellar abscess may cause hemianopic visual indentations accompanied by a general field contraction.

Localizing signs and symptoms cannot be discussed in a paper of this length. However, a few of the cardinal signs and symptoms will be given. In temporal lobe lesions occur muscular paresis, paralysis or spasms, word-deafness, psychical blindness, word-blindness, motor aphasia and motor agraphia. In cerebellar lesions we find nystagmus, subjective vertigo, incoördination, ataxia on the side corresponding to the lesion, diadokokenesis, loss of sense of position, and disturbance of static equilibrium.

Death may take place from rupture of the abscess into the ventricles and subarachnoid space or from exhaustion due to a gradual loss of strength and flesh. The treatment of brain abscesses is surgical. Eggleton in his book on brain abscess says, "Exposure of the under surface of the temperosphenoidal lobe through the roof of the tympanum and antrum followed by puncture of the dura and brain and introduction of drainage material has resulted in a larger proportion of recorded cures than any other method." There is no doubt that this is the best procedure, provided one has very good evidence that the lesion is adjacent to the mastoid cavity. However, one must not lose sight of the fact that he is working through an infected field. If one is unable to localize the lesion, a large subtemporal decompression over that side of the head nearer the infecting focus is a far safer procedure.

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PHOTOGRAPHS OF THE FUNDUS OCULI*

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For many years the X-ray has been found most valuable not only in discovering disease, but in the recording of changes in the bones and tissues of the body. The technician has the X-ray negative, otherwise he would have to depend upon memory and notes. So photographs of the retina of the eye, both in normal and disease, are equally valuable.

In the use of ophthalmoscopy, the art of seeing the interior of the eye is being yearly more impressed upon each group of graduating students. Many find difficulties in observation and in the interpretation of the findings but with a picture this is greatly simplified.

In a diseased condition as papilledema, retinitis, optic atrophy, etc., the small changes in recovery or destruction over a long or short period of time are not always seen and recorded, while a repeated photograph gives a constant check.

The first pictures taken by a Nordenson camera left a large light reflex in the mid-

*Read before the Detroit Society of Ophthalmology, February 3, 1932, at Eloise Hospital. Dr. Robert Beattie, presiding.

†Dr. Ryerson graduated from the Detroit College of Medicine 1911; assistant professor of ophthalmology, Detroit College of Medicine.

dle of the plate, but the present Nordenson takes a clear picture with only a very small black spot near the center. As the third dimension (depth) gives a better result, two pictures are taken at an angle and then reviewed stereoscopically.

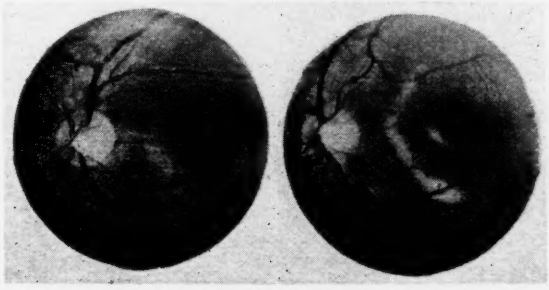

Fig. 1. Fig. 2.

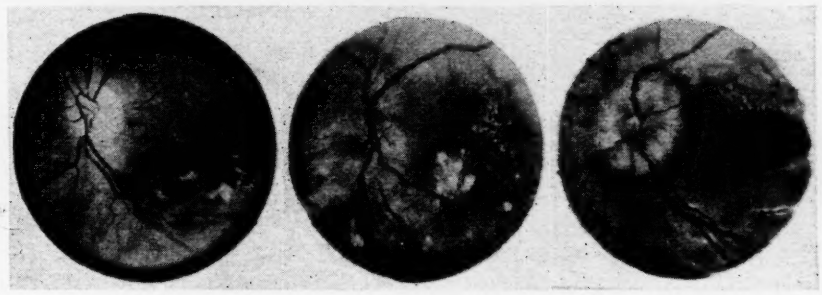

Fig. 3. Fig. 4. Fig. 5.

Figs. 1, 2, 3, 4 and 5 correspond respectively with Cases 1, 2, 3, 4 and 5 as described in the paper.

The operation of the camera requires the steady position of the patient's eye, a widely dilated pupil, at least six millimeters, a constant amperage, with about 1/10 to 1/5 seconds exposure of the plate. It is impossible to obtain a better picture than can be seen with the ophthalmoscope.

The most striking feature of the fundus, both in ophthalmoscopy and photography, is the optic disc. We note its color, shape, size, margins, central excavations and condition of blood supply. To the temporal side of the nerve head in the normal eye is observed the macula, a round dark area, and in the center, generally a bright dot, or fovea reflex.

The fundamental points to observe are the character of the general blood supply of the retina as in caliber of vessels, reflex, tortuosity, depressions, sclerosis and distribution; finally, the remainder of the field, as pigmentation, hemorrhage, retinal density, choroidal vessels and sclerosis.

(A) Upon the examination of the fundus with the ophthalmoscope, various light reflexes are seen and recognized. As these may disappear or move when the direction of light is changed, it is necessary to decide whether a bright area in a picture is an exudate or reflex. When studied as stereo pictures there is little question of doubt.

Case 1. Patient, Miss M.

Shows a normal fundus, vision 20/20. A few light reflexes are present near the middle of the picture. It is natural the temporal section is paler because the nerve fibers are fewer and thinner than those on the nasal half. There is no difficulty in observing which are the arteries and veins.

Case 2. Patient, Mr. S.

O.D.—Vision 20/200. O.S.—Vision 20/20. A "V" shape reflex is between the disc and macula with apex directed to the disc.

The two small dark spots in the center are the result of an india ink spot on the camera lens to block a large light reflex. The macula has a brilliant white dot in the center. It is observed that the arteries are moderately tortuous, while the veins are straight.

Case 3. Patient, Mrs. C., age 53.

Two weeks before examination blurring in the left eye was noticed. The Wassermann and urine were found to be negative, with a blood pressure of 170. O.S. vision, 20/80.

Ophthalmoscopically the picture presents a paleness of the disc, the blood vessels constricted, with changes in caliber. There are clearly observed the large mass hemorrhage in lower temporal area, and a developing optic atrophy.

Case 4. Patient, Mr. O., age 46.

Two months ago blurring in vision of both eyes was noticed. He gave no history of sickness. Examination—sinuses clear, tonsils four plus, teeth negative, blood pressure 180. The urine reveals a heavy amount of albumin. Vision, O.D. 20/50, with correction, vision 20/30.

The stereo photographs reveal an optic neuro retinitis with marked edemas of the lower quadrant of the disc. The vessels are elevated and partly disappear near the disc. The remainder of the disc is completely obscured and the nerve head ophthalmoscopically appears as a red blur. The veins are engorged and slightly tortuous.

The white plaques are superficially situated, well defined and non-pigmented. The "star" does not completely encircle the maculæ. The rays are small, short, linear, rounded whitish spots, while the arteries are constricted and partly obscured in the swollen retina. This patient's other eye shows a similar condition.

Case 5. Patient, E. J., age 30.

There is noticed a slight disturbance in the sight of the right eye. Vision, O.D. 20/20, with correction, 20/50.

The field shows the blind spot twice the normal size. The head of the optic nerve forms a mound-like projection, rising one millimeter above the level of the fundus. The central cup of the disc is very shallow.

The swollen tissue of the nerve compresses the retinal vessels, resulting in narrow arteries, The veins are darkened and dilated with moderate tortuosity.

Folds in the retina are observed between the disc and the maculæ area.

Pictures taken three weeks later showed a slight connective veil over the center of the disc.

Conclusion.—Photography adds to the interest of the fundus study. As in other fields, the effort at times may be disappointing, but again, with a good picture, the result is gratifying.

TRAUMATIC RUPTURE OF THE PANCREAS: REPORT OF A CASE*

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ANN ARBOR, MICHIGAN

Any type of injury to the pancreas is uncommon. Excluding the injuries due to penetrating and gunshot wounds, we find that most of the injuries to the pancreas from blunt force are associated with other visceral damage such as injury to the stomach, liver, spleen or bowel. In 1930, Stern in a careful review of the literature was able to find but twenty cases in which the injury produced by blunt force was limited to the pancreas alone. Of these twenty cases, in fourteen there was actual vertical or transverse rupture of the pancreas and in one fragmentation of the organ. The protected position of the pancreas, being deeply placed as it is within the abdominal cavity, with the stomach and intestines lying in front of it, undoubtedly explains the rarity of pancreatic injuries. However, its fixity, particularly of the head and body, together with the fact that these parts lie directly in front of the first and second lumbar vertebræ, explain how with a properly directed blow it may be caught between the striking object and the vertical column, resulting in either a complete tear of the gland or a more diffuse bruising or crushing of its substance.

A case of uncomplicated complete vertical rupture of the pancreas at the junction of the head and body has recently come under my care, and on account of the extreme rarity of such a condition it has seemed worth while to report it in detail.

The patient (E. M., No. 274741), a young man of twenty-eight, was brought to the surgical clinic as an emergency on the afternoon of January 11, 1932, with a history of having been in a fight on the morning of the same day. At this time he sustained injuries to his abdomen and chest. At noon he commenced to vomit and abdominal pain, tenderness and distention developed. The vomitus had not been fecal in character. Examination revealed an acutely ill young adult male complaining of severe pain in the lower chest and abdomen and frequently vomiting yellowish slimy material. There were several superficial abrasions and bruises on the lower part of the thorax and upper abdomen, both anteriorly and posteriorly. One mark in the left upper quadrant bore the print of the heel of a man's shoe. The examination of the head and neck was not remarkable. The thorax was symmetrical in outline and expanded equally on both sides on respiration. The respirations were normal in character and rate. The heart sounds were regular but faint and no cardiac murmurs were present. The pulse rate was 100, blood pressure 94/30. The lungs were resonant throughout to percussion, the breath sounds were vesicular in character, no râles were heard.

Abdomen.—There was marked abdominal distention with generalized muscular rigidity which was more marked on the right side. There were no areas of dullness to percussion and no masses were palpable. The area of liver dullness was not absent. There was acute abdominal tenderness which was most marked in the epigastrium. No fluid wave. There was a left inguinal hernia which appeared as a mass about the size of an orange and which was not reducible. There was, however, no tenderness over this hernia mass and the overlying skin was normal in appearance. The rectal examination was negative. Extremities: No gross evidence of fracture or other lesion of the bones. Tendon reflexes normal, no Babinski. Temperature on admission 99.9°. Laboratory examination: The urine showed a trace of albumin but was otherwise negative. Hemoglobin 110 (Sahli), white blood count 25,000. An X-ray examination was made of

*From the Department of Surgery, University of Michigan.

the chest. This showed the diaphragm to be normal with very slight elevation on the right. The character of the costophrenic gutter was not unusual, there was some suggestion of moderate hilar thickening of long standing, probably due to recurrent upper respiratory infections but no evidence of injury to the thorax.

Of the various diagnostic possibilities to be considered, perforation of some hollow abdominal viscus seemed the most probable, while the possibility of intra-abdominal hemorrhage had to be entertained. That we might be dealing with a strangulated hernia seemed possible though not probable. The absence of blood in the urine and the normal findings by the hydrostatic test of introducing boric acid solution into the bladder through a catheter with ability to recover the full amount seemed to rule out a bladder rupture. A tentative diagnosis of rupture of some portion of the intestinal tract or possibly of the stomach was made. The moderate degree of shock and evidence of a generalized peritonitis were all in accord with this view. Operation was accordingly advised and this was done about two hours after his admission to the ward. During this interval an intravenous administration of 5% dextrose solution and normal saline was given. The operation was performed under nitrous oxide and ether anesthesia. A lower midline incision was first made. On opening the peritoneum there was a gush of bloody fluid from the abdominal cavity. There was no escape of gas and no evidence of contamination with intestinal contents or of peritonitis. The bleeding seemed to be coming from the upper abdomen and particularly from the right upper quadrant. On palpation, the liver, kidneys and spleen were found to be intact. Accordingly an upper midline incision was then made for more thorough inspection of the region of the liver. On inspection, the liver and gall bladder were found to be normal. The gastrohepatic omentum showed evidence of hemorrhage with a large hematoma which extended onto the stomach wall underneath the serosa. There was a large rent in the lesser omentum with several areas of pancreatic fat necrosis in the neighborhood. On separating the edges of this tear the pancreas could be both seen and palpated and it was found that the head of the pancreas had been practically severed from its body. The line of rupture was fairly clean-cut, almost as though it had been divided with a knife. It was from the torn edges of the pancreas that the bleeding originated. The blood was aspirated and after partial control of the hemorrhage by suture the bleeding was finally controlled by the introduction of a gauze pack and alongside of this, two cigaret drains. It seemed that the main pancreatic duct must have been divided and the treatment by thorough drainage ordinarily carried out for acute pancreatitis was in order. The patient's condition at the conclusion of the operation was fair although during the next few hours it became poor. His systolic blood pressure was 50 and his appearance cyanotic. A blood transfusion of 400 c.c. was given with the result that the systolic pressure rose to 80. The patient was placed in an oxygen tent. The following day his condition was unimproved, the systolic pressure had risen to 90 but the pulse was weak and thready with a rate of 140, and the temperature had risen to 104° F. There were some scattered râles in both lungs. In the afternoon a blood transfusion of 600 c.c. was given with temporary improvement. The systolic pressure after this transfusion rose to 132, only to drop again in a few hours while the pulse became exceedingly rapid and weak. Stimulants such as caffein and adrena'in had no effect and he died at 7:20 P. M. An autopsy could not be obtained.

POST VACCINAL MYELITIS

Thomas William Brockbank, Washington, D. C., calls attention to the fact that the acute inflammatory lesions of the nervous system reported as occasionally following vaccination against smallpox usually have presented the clinical symptoms of encephalitis or poliencephalitis. In cases with paramount spinal cord involvement, even when the lesions accompany smallpox itself, the sensory impairment has been negligible or transient. As a contrast to this generally accepted picture, he reports a case of postvaccinal myelitis with complete spinal anesthesia persisting up to the level of the ninth dorsal segment and paralysis. The clinical and laboratory signs of spinal meningomyelitis are presented. The sensory level seemed to indicate that the inflammation in the acute stage had progressed only to the level of the fifth dorsal segment, although motor signs pointed to mild inflammatory involvement in segments considerably higher. The sensory level two months after onset was in the eighth dorsal segment. The prodromal symptoms began on the thirteenth day after vaccination.—*Journal A. M. A.*

FAMOUS MEN IN MEDICAL HISTORY

SAMUEL D. GROSS

By LAWRENCE D. DICKEY, A.B., M.D.

It is our purpose to consider American Surgery as it was represented by Samuel D. Gross. He was, for fifty-four years (1828-1882), an active practitioner of medicine and surgery, and, for forty-two years (1840-1882), a public teacher of surgery. Gross was in practice for eighteen years before the introduction of anesthesia. The last six of these he was Professor of Surgery at Louisville, Kentucky. In 1882, ten years after Lister visited Philadelphia, he was still active and considered the leading surgeon of the time. We thus see that the surgical life of this man occupied a period which witnessed the greatest advance surgery has known. Pain had been done away with and suppuration was no longer inevitable.

"American surgery in the pre-Listerian period was distinguished principally by a great deal of bold operating on the vascular and osseous systems, by the foundation of modern operative gynecology at the hands of McDowell and Sims, and by the permanent introduction of surgical anesthesia. Its leading representatives in this period were Physick, the two Warrens, Post, Mott, Gibson, the two Smiths, Willard Parker, McDowell, and Sims." Gross also represented this period as well as the one that followed.

Gross's life previous to 1840, at which time he became Professor of Surgery at Louisville, showed how well qualified he was to fill this professorship.

Samuel David Gross was born July 8, 1805, near Easton, Pennsylvania. His parents were of German descent. Early, at about the age of six, he had the desire of becoming a doctor. When fifteen years of age he set to work to prepare himself for the study of medicine.

At seventeen, considering himself competent to commence the study of medicine, he entered the office of a country physician, but got little aid so tried another with no better luck.

"They had none but old, if not obsolete, books; they were constantly from home, never examined me, or gave me any encouragement. With the aid of Fyfe's Anatomy and a skeleton, I learned some osteology; but even this was up-hill business, and I at length gave up in despair. I found that my Latin was inadequate, and that I could not understand the technicalities of medicine without some knowledge of Greek. With some degree of hesitancy, lest I should give offense, I disclosed my feelings to my preceptor, and much to his honor, he at once released me from any obligations to serve out my term of study. *This was the turning-point in my life.* . . . I had made a great discovery—a knowledge of my ignorance; and with it came a solemn determination to remedy it."

For a year he attended the Academy at Wilkesbarre, then for six months a school in New York, then back to Easton for six months' tutoring, but became restless, and went to the High School in Lawrenceville, New Jersey, for six months, thus completing his course of study toward the end of the year 1824. These many changes in schools were the result of difficulties with his guardians, who did not furnish him with enough money, although his father had left sufficient.

"I was nineteen years of age," said Gross, "when I commenced in earnest the study of medicine. My preceptor was Dr. Joseph K. Swift, of Easton, a graduate of the University of Pennsylvania, and a practitioner of some note, with considerable pretension to scientific knowledge, and a deadly hatred of quackery. The understanding was that I was to remain under his tuition for three years, inclusive of two lecture terms, and that he was to receive, as an office fee, two hundred dollars, for which he was to furnish me with the use of certain books, and to examine me once a week on such branches as I might be studying. His library was small, and its contents of little value. He had no apparatus of any kind, plates or diagrams, no specimens in materia medica, or anatomical preparations; nothing, in short, but a skeleton, and this, with the aid of Wistar's Anatomy, was the first thing I set about to master. In less than two months I had accomplished my object; I knew pretty well every foramen, prominence, and suture, and was complimented upon my progress. I then went to the ligaments and muscles, and at length to the viscera, and of course learned little. From anatomy I went to surgery, then to materia medica, and finally to midwifery and the practice of medicine. The works on these subjects that were put into my hands were Dorsey's Elements of Surgery, Chapman's Materia Medica and Therapeutics, Burns's Midwifery, edited by James, and Thomas's Practice, edited by Hosack. Chemistry I did not study, being told that it could not be learned out of the lecture-room without the aid of experiments, and no assertion, I am sure, is more true. I was generally examined on Saturday, and it is due to preceptor and pupil to say that they were always punctually at their post. From an hour to an hour and a half was usually consumed in this way; the book which I was engaged in reading being always spread out on the table before my 'master'. I need not say that this was a dry and

unprofitable mode of studying medicine; it was acquiring knowledge under difficulties; it was a waste of precious time; and I was therefore glad when the period arrived for attending lectures. I was eager for a new field, where I might obtain some substantial information, and some remuneration for my pains. I had all along felt that, like Sisyphus, I was engaged in rolling stones up hill, and doing myself no good beyond the slight reputation I gained as a devoted student. Besides, I had seen no practice; my preceptor was not popular, and few of his patients could be visited by an 'unfledged doctor'. Swift, I am sure, took an interest in me; but it soon became apparent to me that such instruction as I was receiving from him had little value, and fell far short of what a student had a right to expect from his preceptor. Perhaps, however, this was not his fault, but the fault of the vicious system of office pupilage, still prevalent in nearly all sections of this country, a system which cannot be too pointedly condemned."

In October, 1826, he arrived in Philadelphia to attend the course of lectures. Swift wanted him to go to the University of Pennsylvania, his Alma Mater, but Gross was attracted by the brilliant work of Dr. George McClellan, the Professor of Surgery at Jefferson Medical College, so he entered there. For eighteen months he was a private pupil of McClellan's and did not return to Dr. Swift. McClellan was the founder of Jefferson Medical College and gave lectures on both anatomy and surgery. "McClellan was an enthusiast," and had a profound influence upon his young pupil for, as Gross says, "I soon became passionately fond of dissections and thenceforth made practical anatomy a special study." Surgery also received his enthusiastic attention. In referring to his student days he says, "After all, everything depends upon the student himself, his industry, his habits of attention, his culture, and his natural capacity. His knowledge must come chiefly through his own personal exertion. Lectures, however able, are only aids. They never can make a good physician or a great man out of a dunce." In 1828 he graduated after eighteen months of study and his thesis was entitled, "Nature and Treatment of Cataract," a subject which always deeply interested him.

He opened an office in Philadelphia and spent most of his time in translating foreign works. These works were: Bayle and Holland's General Anatomy, Hatin's Manual of Obstetrics, Hildenbrand on Typhus Fever, and Travernier's Operative Surgery (1829). The latter "was the first treatise on operative surgery ever published in the United States." This was the last translation he ever made. In 1830 his first original work appeared, entitled, "The Anatomy, Physiology, and Diseases of the Bones and Joints." All these were published in about eighteen months after he took his degree, and, as he remarks, "I labored day and night

"THE GROSS CLINIC"

(Reproduced from the famous painting by Thomas Eakins, now in the possession of Jefferson Medical College.)

under the stimulus both of ambition and of poverty."

About that time he married and moved to Easton, his old home, where he remained for about two and a half years. While there he obtained a cadaver, constructed a dissection room and devoted himself diligently to dissection. He also had an ardent desire in his professional youth to become an experimentalist, both with a view to throwing light upon certain obscure points in physiology, and to earning some reputation. His first investigation was of the temperature and coagulation of the blood and he found that the average temperature of venous blood was 96°F. and not 98° as recorded in the books. Next on urinary excretion, to ascertain the rapidity of transit of substances taken into the stomach. Then, in connection with a legal case, some investigations upon manual strangulation.

In the summer of 1832 Asiatic cholera appeared on the American continent for the first time. Gross was chosen, by his com-

munity, to go to New York and study the situation. In the hottest of July weather he spent three weeks there, but learned little. He found "empiricism reigning with unlimited sway. Some used inunctions of mercurial and capsicum ointment, with calomel, camphor, and capsicum internally," and seemed to get good results.

In reviewing medicine as it was practiced in Easton at that time he says, "Upon one thing all were agreed: they all bled, all gave emetics, all purged, all starved their patients. They were all real Sangrados, mowing down alike the infant, the youth, the adult, and the old man. Tartrate of antimony and potassium was the favorite emetic, calomel and jalap the accepted cathartic, and water-gruel or panada the common fever diet." Fifty cents was the fee for a town visit, and 12½ cents for bleeding or the extraction of a tooth.

In October, 1833, he moved to Cincinnati. Here through the influence of Dr. John Eberle he had obtained the position of Demonstrator of Anatomy in the Medical College of Ohio. He gave three lectures a week, chiefly on surgical and visceral anatomy. Thus he laid the foundation for the study of practical anatomy, which was, "up to that time, a nominal matter in the Western States."

In 1835 Daniel Drake founded the Medical Department of the Cincinnati College with a chair of Pathological Anatomy, the first of its kind. Gross was unanimously appointed, by the trustees, to this chair. The school remained in operation until 1839, when it was disbanded. By this time he had a considerable medical and surgical practice, which in the year preceding October, 1840, had brought him in $9,000.

He published his great work entitled, "Elements of Pathological Anatomy," in 1839. His own comment is, "As far as I know, mine was the first attempt ever made in this country, or, indeed, in the English language, to systematize the subject and to place it in a connected form before the profession." The work took three years in its preparation, and went through three editions. "There is one feature of this book which is worthy of special notice. I refer to the fact that the description of the morbid anatomy of every organ in the body was preceded by an account of its healthy color, weight, size, and consistence, founded upon original observation, a plan until then unknown in such works."

During the year 1839 he was appointed Professor of Medicine in the University of Virginia, and offered the chair of Anatomy in the University of Louisiana at New Orleans. He declined both.

This was the story of his life at the time he became Professor of Surgery in the University of Louisville, Kentucky. He was thirty-five years old and full of enthusiasm and ambition. Grounded as he was in anatomy, pathology, and physiology, he had an ideal background for the teaching of surgery.

In October, 1840, he went to Louisville to begin his life as a surgical teacher. Early during his residence in Kentucky he carried out further experiments with dogs on the nature and treatment of wounds of the intestines. Things went well in Louisville and his practice grew until, about 1850, he "had a more commanding surgical practice than any man in the Southwest." About this time affairs at the college became uncertain, so when offered the chair of surgery in the University of the City of New York he accepted it.

He spent the winter of 1850-51 in New York as the successor of Valentine Mott. The leisure time of that winter he used to finish his treatise on the Urinary Organs which was published in 1851. This work was much needed and at once became accepted as authority. A second edition appeared in 1855 and of it he says: "In the appendix is the first and only attempt ever made by any writer, as far as I am aware, to furnish a complete account of the prevalence of stone in the bladder and of calculous disorders in the United States, Canada, Nova Scotia, Europe and other countries." This piece of original research had been carefully carried out and he was much disappointed to find that it attracted but little attention.

At the end of the year he resigned and returned to Louisville, which he considered had the best school. The next great work he produced was a treatise on Foreign Bodies in the Air-passages. "It was the first attempt to systematize our knowledge upon the subject, and the work is, therefore, strictly speaking, a pioneer work." Dr. Morell Mackenzie, nearly thirty years after, made the following remark: "This invaluable essay gives full reports of 200 cases,

and is so complete that it is doubtful whether it will ever be improved upon."

Along with other great American surgeons of the pre-Listerian period he made his contribution to the surgery of the vascular system. In an article which appeared in the Western Journal of Medicine and Surgery he said: "Among my earliest papers was an account of a case of axillary aneurism, for which I had tied the subclavian artery. It was accompanied by a statistical notice of all that had been done in regard to the surgery of this vessel up to that period. My case was almost unique, only one similar case having occurred previously."

In 1851 he wrote a paper dealing with the history of Kentucky Surgery in which he established priority for Ephraim McDowell as the originator of ovariotomy.

In 1852 he sent to the Philadelphia Medical Examiner a short account of the use of adhesive plaster in the treatment of fractures, in which he says: "I proved that I had been the first to describe the method in my work on the Diseases of the Bones and Joints issued at Philadelphia in 1830. The method had been claimed by a number of physicians, none of whom were entitled to it. It was first practised by Dr. Joseph K. Swift, of Easton, my early preceptor, in a case of compound fracture of the leg in an Irishman, whom I saw several times during his protracted confinement. I was so much pleased with the plan that I briefly described it in my work. Swift himself never published any account of it."

In 1856 at the meeting of the American Medical Association in Detroit he read a paper on the "Causes which Retard the Progress of American Medical Literature." Thus, as well as in other ways, he did his share in building up the medical literature of our country.

His alma mater, Jefferson, elected him Professor of Surgery and he accepted. In September, 1856, he took up his residence in Philadelphia, where he spent the remainder of his active life until his resignation in 1882. Shortly after he arrived in Philadelphia he received the news that half, approximately 2,000 volumes, of his library which he had left in Louisville had been destroyed by fire. Of the incident he says, "I regretted the disaster so much the more because it involved the loss of the finest and most extensive collection of books on the genito-urinary organs which had ever been brought together in this country. Many of the books were from the library of the late John C. Crosse, the eminent lithotomist, of Norwich, England, and can never be replaced."

Along with Dr. J. M. DaCosta he founded the Philadelphia Pathological Society in 1857, and was its first president. Also during these early days in his new location he set to work to finish his system of surgery which he had determined to make, if possible, "the most elaborate, if not the most complete, treatise in the English language." It was published in 1859.

The remaining events and contributions of his life are too numerous to warrant more than mention of the most outstanding. In 1867 he was president of the American Medical Association; in 1869 he read a paper on the Training of Nurses, the first of its kind in the United States; in 1876 he was president of the International Medical Congress in Philadelphia; in 1879 founded the Philadelphia Academy of Surgery; and in 1880 founded the American Surgical Association. He was the first president of each. He resigned his chair of surgery in 1882, but remained active, especially in medical societies and in writing, until his death, May 6, 1884.

Gross did more than practically anyone else to make American surgery respected in Europe. Juettner in his account of "Daniel Drake and his Followers," remarks: "No American physician has ever been honored in Europe like S. D. Gross. He visited Europe several times and everywhere the princes of intellect, the mighty ones in the realm of science, vied with each other to do him honor."

To sum up Gross's contributions to surgery other than what has already been mentioned I will quote the following from his autobiography.

"Deep stitches in wounds of the wall of the abdomen, to prevent hernia or protrusion of the bowel after recovery. As far as my reading extends I know of no work on surgery in which this subject was placed in its true light, or, indeed, any light prior to the publication of my monograph on wounds of the intestines. Of course every surgeon speaks of it now.

"The invention of an enterotome for the treatment of artificial anus, intended to supersede the clumsy contrivance of Dupuytren.

"A tracheotomy forceps, for the extraction of foreign bodies from the air-passages, favorably mentioned by writers on surgery.

"Wiring the ends of the bones in dislocations of the sterno-clavicular and acromio-clavicular joints, taught originally in my lectures in the University

of Louisville soon after I took charge of the chair of Surgery in that school.

"An arterial compressor—a peculiar pair of forceps—for arresting hemorrhage in deep-seated vessels not accessible to the ligature or amenable to torsion or acupressure, as in the perineum after lithotomy.

"An instrument for extracting foreign bodies from the nose and ear, found in nearly every pocket-case in the country.

"Laparotomy in rupture of the bladder.

"Direct operation for hernia by suturing the pillars of the ring.

"Apparatus for the transfusion of blood.

"First account of prostatorrhea.

"Description of a new form of neuralgia of the jaws in old persons.

"Pododynia, a disease of the foot, first described by me.

"The propriety of amputating in senile gangrene has long been a disputed question. If the operation be ever proper, and there are certain cases in which it is, it should invariably be performed, as I have reason to believe I was the first to teach, at a great distance from the seat of the disease, after a very perfect line of demarcation has formed."

Gross was a voluminous writer, prided himself on being "a teacher of principles," and considered himself a better physician than surgeon. The following statement from his paper on "A Century of American Surgery" serves to illustrate the broader application of this last consideration:

"Although this paper is designed to record the achievements of American surgeons, there are, strange to say, as a separate and distinct class, no such persons among us. It is safe to affirm that there is not a medical man on this continent who devotes himself exclusively to the practice of surgery. On the other hand, there are few physicians, even in our larger cities, who do not treat the more common surgical diseases and injuries, such as fractures, dislocations, and wounds, or who do not occasionally perform the more common surgical operations. In short, American medical men are general practitioners, ready, for the most part, if well educated, to meet any and every emergency, whether in medicine, surgery, or midwifery. Of late, the specialists have seriously encroached upon the province of the general practitioner, and, while they are undoubtedly doing much good, it is questionable whether the arrangement is not also productive of much harm. The soundest, and, therefore, the safest, practitioner is, by all odds, the general practitioner, provided he is thoroughly educated, and fully up to his work."

Finally of his position in the profession he says:

"The only genius I possess is the genius of industry; if I have any other, I have not been able to discover it. The position which I have attained in my profession has been achieved by hard blows, by no special intellectual endowment, by no special gifts from God; by no special favor from man, but by my own unaided efforts, continued steadily and perseveringly through a long series of years, during which a kind Providence afforded me sound health, lofty ambition, and unflinching fidelity to my profession."

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

MORTALITY RATES FOR 1931

Report from the Bureau of Records and Statistics on the 1931 mortality rates shows marked reduction in diphtheria, tuberculosis, typhoid fever, diarrhea and enteritis, and pneumonia, and increases in cancer, diabetes and heart disease. The infant mortality rate dropped, while maternal mortality remained the same.

The following brief table gives the 1931 rates, with those for 1921 and 1930 for comparison:

	1921	1930	1931
Diarrhea (under two years)	43.0	14.5	9.4
Diphtheria	25.2	6.2	3.5
Tuberculosis (all forms)	72.3	60.1	53.9
Typhoid Fever	7.5	1.8	1.5
Pneumonia (all forms)	.....	68.6	58.5
Cancer (all forms)	87.3	91.3	93.5
Diabetes	.....	18.2	19.3
Heart (all forms)	.....	205.4	207.0
Infant Mortality	79.0	62.8	57.1
Maternal Mortality	6.3	6.0	6.0

OUTBREAKS OF TYPHOID FEVER

In the March issue of the Michigan State Medical Journal, mention was made of the outbreak of typhoid fever in Bay City, in which there were 10 cases occurring among guests at a Polish wedding. Since that time there have been two other small outbreaks of this disease in the state.

The first of these occurred in Monroe. Here there were nine cases reported, and several others on which definite diagnoses were not made. These cases had onsets occurring during the first two weeks of February. The cases all occurred in homes in one small locality on the outskirts of the

city of Monroe. Families living in these homes all used water from one well. The source of infection was traced to a carrier living in a house on the property on which the well in question was located. The cesspool on this property was found to be overflowing and was located within 15 feet of the well. There was a hole in the casing of the well, below the surface of the ground.

The second of these epidemics occurred in Yale and was milk-borne. Fifteen cases were definitely diagnosed and traced to the common source, which was a carrier who had infected the milk supply. The carrier has been located.

In each of these two epidemics and also in the Bay City outbreak, the carrier responsible has been found. These three carriers have been responsible for at least 35 cases, and perhaps as many as 50. They will be kept under observation by the local and state health authorities and it is not likely that we shall have any more outbreaks traceable to them.

These outbreaks are all too striking a demonstration of the truth of statements made in these columns previously. The three or four hundred cases of typhoid fever occurring annually in Michigan are for the most part due to carriers. In the prevention of this "residual typhoid" the question of the mode of transmission is neither so important nor so fundamental as the question, *who* is the carrier responsible? Occasionally within a family we have several cases. In such an instance it is common to find that the first case has been the probable source of infection for the subsequent cases; but these first cases in families and the single or sporadic cases are, like the cases in the outbreaks referred to, due to carriers.

It is important to make all our water and milk supplies as safe as possible from contamination of any kind, but in the control of the typhoid now remaining it is of first importance to find and control the individuals who are contaminating our private water supplies, our milk, and our food. The search for carriers should be relentless. Physicians in practice have been and can be of great assistance in this search.

C. D. B.

ALLEGAN COUNTY HEALTH UNIT

One more county health unit has been added to the list, making a total of 29 counties in Michigan that have full-time service by qualified physicians. The last unit to start functioning is that of Allegan County, which began work on April 1.

Dr. A. B. Mitchell is Director of the Unit. Dr. Mitchell has completed the course in the Michigan Department of Health Training Station for Health Officers.

The new unit has offices in the Court House in Allegan.

ANTIRABIC VACCINE

Beginning May 1, 1932, the bureau of laboratories of the Michigan Department of Health will add Antirabic Vaccine (Cumming) to the list of biologic products distributed free to physicians of the state.

Dr. G. W. McCoy, Director of the National Institute of Health, visited the bureau of laboratories during March, to make the annual inspection required by the federal government of the manufacture of biologic products for interstate commerce. Dr. McCoy gave complete approval of processes now employed and made several suggestions for improvement. He also approved the new Antirabic Vaccine (Cumming) which will be distributed beginning May first.

CHILD HYGIENE ACTIVITIES

The series of Women's Classes conducted for six weeks by Dr. Ida Alexander in St. Clair County has been completed. An enrollment of 1,132 women took the work. Dr. Alexander began a similar series of classes in Ottawa County on March 21.

The Ingham County Women's Classes conducted by Dr. Muriel Case with an enrollment of 1,465 have ended, and Dr. Case, assisted by Helen Linn, R.N., nutritionist, is carrying on a similar series in Kent County.

Bertha Cooper, R.N., completed her series of Child Care Classes in Van Buren County and is now working with the girls in Monroe County schools. Beatrice Ferriby, R.N., is conducting Child Care Classes in Kalamazoo County since the completion of her classes in Osceola County. Similar classes are being carried on in Hillsdale County by Nell Lemmer, R.N. Annette Fox,

R.N., has completed a series of classes in Dickinson County and is now assisting in organization work in the southern part of the state.

Diphtheria immunization work in Lapeer County carried on by Dr. Edna Walck and Esther Nash, R.N., has been completed.

Julia Clock, R.N., is coöperating with the Bureau of Epidemiology, in making a survey of final results of recent infantile paralysis cases.

PARENTERAL USE OF LIVER EXTRACT IN PERNICIOUS ANEMIA

William P. Murphy, Boston, treated thirty patients with pernicious anemia by means of liver extract administered parenterally. The extract may be administered easily and safely either with or without hospitalization of the patient and with the greatest assurance of success. Improvement in the blood is even more rapid and striking than that to be expected from the ingestion of much larger doses of liver or potent liver extract. Treatment was followed by an increase in the reticulocytes (young red blood cells) generally within a shorter period than occurs after treatment by mouth, and the numbers of the erythrocytes have increased promptly in practically all cases treated, even in those patients who were considered to be somewhat resistant to improvement to liver or extract given orally. There was a prompt and often very striking increase in the numbers of the white blood cells and blood platelets within a few hours of the beginning of treatment and a continuance of a normal or slightly elevated level during the course of treatment. Symptomatic improvement occurred after parenteral treatment, as is to be expected following the satisfactory oral use of liver or liver extract, although the improvement in general well-being of the patient possibly occurred sooner after the onset of treatment than when oral treatment is used. Improvement in symptoms resulting from the spinal cord damage was striking in those patients whose treatment had been most satisfactorily carried out. The extract was administered to the series of patients without a reaction of importance. It may be advisable, as has been done in some of the patients with whom this report deals, to test all cases with one or more small preliminary injections, in order to avoid the possibility of a severe reaction in the rare patient who may be hypersensitive to the liver. The most satisfactory use of parenteral treatment is the intramuscular injection of large or optional amounts of the liver extract (extract prepared from 300 to 400 Gm. or more of liver) during the beginning of the treatment of a patient in relapse. Subsequent and maintenance treatment may perhaps best be carried out by similar smaller injections at intervals varying from five to seven days, or even much less frequently in the uncomplicated cases. The exact interval must be determined by the condition of the blood and of the patient. Although the injections may be given daily, such treatment will rarely be indicated, and it has been generally less well received by the patient than treatment at less frequent intervals. The rapid effect, together with the ease and safety of administration of the extract, especially intramuscularly, makes it an invaluable means of treating the critically ill patient and may well replace the use of either transfusion or stomach tube in the treatment of such a patient. The injection method of treatment should be a valuable substitute for the oral method in the patient who finds difficulty in the constant ingestion of a sufficient amount of liver material or whose gastro-intestinal tract is upset thereby, with resultant gas, discomfort or diarrhea. In the latter group the injections may be used permanently or for periods of a few weeks, alternately with liver or extract by mouth. In fact, such an alternation of methods may be desirable during the maintenance treatment of many patients who now find little or no difficulty with the oral regimen. Finally, mention is made of the economy possible through the use of parenteral extract as compared with the expense of either liver or liver extract administered orally.—*Journal A. M. A.*

RELATIVE VALUE OF INORGANIC AND ORGANIC IRON IN HEMOGLOBIN FORMATION

C. A. Elvehjem, Madison, Wis., describes experiments in which he demonstrated that, in the absence of copper, organic iron (hematin) is as ineffective as inorganic iron (ferric chloride) for the cure of nutritional anemia in rats. In the presence of copper, organic iron promotes a partial cure of the anemia in rats, but the regeneration is neither so rapid nor so complete as the recovery obtained when ferric chloride is used as the source of iron. The hemoglobin content of the blood of rats, which remained at from 6 to 7 Gm. per hundred cubic centimeters as long as hematin and copper was supplied, increased to 16 Gm. per hundred cubic centimeters in three weeks when ferric chloride was added to the diet. The iron content of the livers from the different animals demonstrates that the decreased activity of the organic iron is due to the inability of the rat to assimilate the iron present in the hematin molecule. The results of the experiments show that the limitations of liver in the cure of secondary anemias, which have been observed by different workers, is due to a lack of available iron. Liver itself does not supply large amounts of iron. One hundred grams of fresh beef liver contains only 8 mg. of total iron, and of this total a considerable amount is organic iron which is utilized to only a small extent. It is evident that further studies on the amount and quality of the iron present in food materials used for the treatment of secondary anemias are very necessary. In practice the limitation of such organs as liver as a source of iron should be borne in mind, especially if the cause of the anemia is a specific iron deficiency. Certain commercial preparations, highly recommended for the treatment of secondary anemia because of their large organic iron content, may also be deficient in available iron because the hematin compounds are not readily broken down in the digestive tract. The relatively small amount of inorganic iron in most food materials is a fortunate condition because, if inorganic iron, which is catalytically active in many oxidation processes, were present in large quantities, many of the valuable organic factors found in foods would be destroyed. Under ordinary conditions the animal organism can obtain sufficient iron from the directly available inorganic and the partially available organic iron in its food to supply the needs. It is only in those cases in which the normal iron supply has been interrupted that one must turn to an increased supply greater than that furnished by an average well balanced diet. When such additional iron is required, one must rely on iron compounds which are more available than hematin.—*Journal A. M. A.*

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MAY, 1932

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon

EDITORIAL

POST-GRADUATE OPPORTUNITIES

In the spring the progressive physicians' fancies turn to thoughts of post-graduate work to be pursued as intensively as his time and means will permit. The April number of this Journal contained (page 293) the annual announcement of the courses given under the auspices of the Department of Post-graduate Medicine of the University of Michigan. As the reader will see, a large portion of this work will be given in Detroit. The clinics of Detroit offer unlimited opportunity as the basis of post-graduate study. Regarding a function of the larger American cities that may be well emphasized, Dr. Ray Lyman Wilbur* says:

"While I am deeply sympathetic with undergraduate medical school instruction, I do feel that certain cities of the United States should devote themselves to the training of physicians rather than the instruction of medical students. Experience has shown that medical students can be adequately handled in comparatively small communities and with small institutions, while only large centers can adequately deal with the difficult training of mature physicians. It is no longer effective for these physicians to come in contact with one great leader through lectures and demonstrations. That opportunity passed with the saddle bags. There is need of organization and systemization of the clinical, research and teaching opportunities. It is a great privilege for any teacher or any medical group to lead a medical student into the mazes of medicine, but it is a greater one to lead the active men and women of the profession to more adequate medical services."

We have emphasized from time to time the necessity of periodical contact with the great medical centers of the country. The work begun a few years ago by the department of post-graduate medicine of the University of Michigan in conjunction with the Michigan State Medical Society has brought opportunities for post-graduate study practically to our own doors. The profession has been appreciative of this fact by the response that has been made. In some of the courses offered last year, many more applied than could be accommodated. Perhaps the best way to combat the cultist and irregular practitioner, after all, is better qualification of the regular physician.

THE OWNERSHIP OF X-RAY FILMS

Of general interest to the medical profession and of particular interest to those devoting their time to X-ray diagnosis, is a decision by the Ingham County Circuit Court to the effect that X-ray films are the property of the hospital or the private X-ray laboratory in which the examination was made. This is the second time within the past two years in which such decision was made by a circuit court in this state, the first being that already noted in this Journal in connection with the Hurley Hospital of Flint. Apart from the legal aspect, X-ray specialists have felt that the interpretation is the all-important thing in connection with an X-ray examination and that the film or radiograph is simply the basis of the interpretation. Therefore the films or radiographs stand in about the same relation to the interpretation as any other data that would be

*Journal A. M. A., April 2, 1932, page 1210.

intelligible to the physician making them and to no one else.

In the recent decision at Lansing (April 4, 1932) Judge Carr's charge to the jury is as follows:

"Gentlemen of the Jury, this is rather an interesting case in some of its aspects. But as I view the situation it resolves itself into a question of law.

"Now it appears that these X-ray films were taken by Dr. Pinkham; he had them in his possession at the time that this action was instituted. There is, however, no showing in the case that these X-ray films at the time of the institution of the suit or at the present time had or have any intrinsic value whatever. Replevin lies to recover property that has value. It will not lie to recover something that has no value, and as I say there is no proof of value concerning these X-ray pictures or films.

"And then we come to the question, passing by this matter of failure to prove value, when X-ray films or pictures are taken by a physician is there any implied undertaking on the part of the physician taking such pictures that they will be turned over to the patient? The undisputed evidence in this case is to the effect that it is customary that such films be retained by the physician who has taken them—retained by him as a part of his record concerning the case; retained, I suppose, on the same basis and on the same theory that he retains his temperature chart that he has made or other record concerning the diagnosis or treatment of a case. That testimony stands undisputed on this record. I think it must be conceded that it establishes an uncontradicted custom touching and concerning the subject matter of this case. And that as a matter of law it must be said that where X-ray pictures are taken by a physician under the circumstances such as they were taken by Dr. Pinkham in this case, there is no implied undertaking to turn those films over to the patient.

"It becomes the duty of the court therefore to direct you to return a verdict of not guilty as to both defendants and the clerk will receive the verdict."

There has not been a supreme court decision so far as we can learn regarding the ownership of radiographs.

TUBERCULOSIS BACILLUS KNOWN FOR HALF A CENTURY

It is half a century since Robert Koch made the epoch-making discovery of the germ which causes tuberculosis. To be exact the date was March 24, 1882. Up to the time of the recognition and isolation of the causative factor of the disease, no scientific approach to the problem of its elimination was possible. Since that time we have travelled a long way in our methods of prevention and treatment of this disease which was at one time the chief cause of death. One person out of seven died of it, and if those were counted who died between adolescence and old age the number was as many as one out of three. According to present statistics compiled by the National Tuberculosis Association one person out of seventeen dies of it.

While the discovery of the causative factor of tuberculosis was made only a half a century ago, the disease is one of the earliest to be recognized as an entity. Its symptoms were recognized and described by Hippocrates, but until modern times tuberculosis was considered incurable.

Jean Villemin (1865) was able to produce typical cases of tuberculosis in healthy animals by injecting tubercles from an animal afflicted with the disease. Villemin's experiments established the fact that tuberculosis is a contagious disease. No further progress was made, however, until in the fall of 1881 when Robert Koch set himself about endeavoring to discover the germ that causes tuberculosis. He felt very certain that consumption was a germ disease. Koch was aided in his work by the perfection of staining methods in the study of bacteria. With his alkaline solution of methylene-blue he was able to distinguish the hitherto unknown germ. All are more or less familiar with Koch's laws. The germ must be grown outside the body and then injected into healthy animals to see if it produces the disease. It must then be isolated from the animal in which the disease has been produced and grown again in pure culture. This he was able to do and thereby established his thesis.

The story of the discovery is interesting. Koch proceeded as he had done before with the anthrax bacillus by injecting it into the healthy animal. He then endeavored to grow the germ from the animal affected by the disease on different culture media, among them solidified blood serum. He incubated the germ in vitro for the usual period of time but found no growth. This might have ended his experimentation. However, he extended the time for a week, when he discovered small white spots on the surface of his culture media in the test tubes in which the virus had been planted on the blood serum. Examining these colonies he identified the bacilli as the same found in the tubercular lesion. These bacilli were again planted in healthy animals under various conditions and all were found to come down with the disease. Hence another great discovery.

Koch's discovery more than confirmed the work of Villemin to the effect that tubercu-

losis was an infectious disease and it also pointed the way to the precautions that must be taken to prevent its spread. In many parts of this State efforts are being made towards the still further conquest of this scourge. It would seem that we have arrived at such a stage that intelligent effort in the way of coöperation on the part of the lay population should go a long way towards the extermination of tuberculosis.

CONCERNING RECENT GRADUATES IN MEDICINE

It is always interesting to learn of the geographic location as well as the tendencies to specialize on the part of members of the medical profession. Dr. Weis Katten* of Syracuse has made a rather intensive study of the graduates of American and Canadian medical colleges for the year 1925, with some rather interesting conclusions. He notes a tendency for men to enter on the practice of medicine at a later age than in former years. This he explains by the increased pre-medic and pre-graduation requirements and the fact that many men do not begin the study of medicine until they are past twenty-five years of age. There is a tendency, as seen among the 1925 graduates, to locate in the larger communities. It is said that 47.7 per cent of the population of the United States resides in communities of less than 5,000 inhabitants. We might expect the same percentage of doctors to locate in such communities. The percentage, however, is only nineteen.

There is a tendency (again based on 1925 graduates) for about one-half of the graduates to practice in the same state in which the college of which they are graduates is located, and for one-fourth to practice in the same city. Of the 1925 graduates this writer tells us that 99 per cent of graduates from American colleges practice in the United States, while only 59 per cent from the Canadian colleges practice in Canada. We presume that approximately 40 per cent of the graduates of the Canadian medical schools migrate to the United States. They come for post-graduate study in the various large American medical centers and do not return to Canada.

In regard to specialization, about 35 per cent of the graduates of 1925 and also the graduates of 1920 of whom a similar study was made, limit their work to a specialty within six years after their graduation, while more than 70 per cent look forward to limiting their practice to a single specialty. One-half of those who specialize within six years do so without having had any experience in the general practice of medicine.

The writer notes that seventeen and six-tenths per cent of the graduates of both 1920 and 1925 were found to occupy full-time salaried positions within six years after graduation. The study of the 1920 and 1925 graduates may be taken as a cross section of the situation as it has obtained during the past ten or fifteen years. There is a large percentage on full-time salary, and a marked tendency towards specialization which may be accounted for by the fact that medical knowledge has become so extensive that it is not possible for one person to master satisfactorily more than even a small portion. Yet we feel that there is a dignified place for the up-to-date general practitioner. A few months ago it was our privilege to print in these pages an address* by Dr. Charles G. Jennings of Detroit in which he outlined a field for the physician in general medicine that might well absorb the energies of the most devoted and ambitious members of the medical profession. And lastly we note the continued urbanization of medical graduates. However, this study was made in connection with 1925 graduates and doubtless with the depression of more recent times, a similar study would show a disposition on the part of graduates to locate in smaller places where the overhead in connection with medical practice is much less, which in the end offsets diminished incomes.

*Tendencies in Medical Practice Based on the Study of Graduates in 1925, by Weis Katten, Syracuse, N. Y., Journal of American Medical Colleges.

ON ADVERTISING

We refer to the matter of publicity of medicines, drugs, apparatus, equipment and all the aids to the practice of medicine. It is done in several ways but particularly by advertising in medical magazines and by circularizing the profession. We believe that space in the medical magazine is by far the better method. Our reasons: firms advertising in medical journals have an exclusive medium. Those who rely on circulars to the

*See Journal Michigan State Medical Society, Volume 30, page 919, December, 1931.

profession are only part of a numerous group who fill the professional waste basket every morning with circulars advertising dubious investments and other get-rich-quick schemes which the doctor has long ago come to look upon as a nuisance which he has learned to ignore. There is an old jingle:

> He who has something to sell,
> And goes and whispers it down a well,
> Is not so likely to collar the dollars,
> As he who climbs a tree and hollers.

But this is not the kind of advertising we mean.

The writing of high grade advertising matter is an art which requires much study. It involves illustration and typographical arrangement that must prove pleasing to the eye; it must give the merits of the production in a brief, convincing way, but must avoid anything that would in the least savor of exaggerated or false statement. Turn to the advertisements in this Journal. The reader will find interesting descriptions of products ranging from drugs, foods, orthopedic appliances, books, to institutions providing special care for the sick.

WAVE LENGTHS

In these days of radio, and for the doctor radiotherapy, the following data in regard to wave lengths of the various rays will be of interest. Light rays range from the Hertzian through to the cosmic rays. Of these the solar spectrum comprises a small fraction. The Hertzian or radio waves are the longest. The longest radio waves are several miles in length, while the shortest are only .03 of a centimeter long. Next come the heat or infra-red rays, invisible to the eve but detectable by a thermometer or by the sensation of warmth. They are called infra-red because they precede the red rays of visible light. Their wave length ranges from .03 of a centimeter to .000078 of a centimeter. The infra-red rays begin with red light with a wave length of .00078 centimeter and end with violet light with a wave length of .000038 of a centimeter.

The ultra-violet rays, which range down to a wave length as low as .00000136 of a centimeter, the X-rays, ranging down to a wave length of .0000000137 of a centimeter, and the gamma rays of radium, the shortest having a wave length of .0000000002 of a centimeter, follow in the order named. The cosmic rays, the seventh known type of electromagnetic radiation, have the shortest wave length of all, some thousands of times shorter than the shortest gamma rays.

A BIT OF MEDICAL HISTORY

THE ALEXANDRIAN SCHOOL

From the time of the death of Hippocrates in 375 B.C. until the founding of the Alexandrian School in 331 B.C. not much real progress was made in medicine. There had been a good deal of philosophizing as we have seen by a number of post-Hippocratic cults. There were not, however, more than three or four men of the first rank. Diocles, already mentioned, was considered by Pliny to be "both in time and reputation next to and second only to Hippocrates." He was a keen anatomist, but, though said to be a prolific writer, not much of his work remains. Another important physician of the time was Praxagoras, a native of Cos, about 340 B.C. He was the first to recognize that pulsation occurred only in the arteries but maintained that the veins only contained blood; the arteries air. He came to this conclusion as the arteries were found empty after death.

Following the death of Alexander, Egypt came under the control of Ptolemy and under his wise rule Alexandria became one of the most important cities on the Mediterranean Sea. Ptolemy founded a museum which performed the function of a modern university. This institution developed under his successors so that the library contained more than half a million volumes, and teachers were attracted from all centers of learning in the ancient world. Among them were such men as Archimedes and Euclid the geometrician. Those of us who are in the sixth or seventh decade are more or less familiar with the Euclidian geometry of our boyhood. In mechanics, physics, astronomy and mathematics the work of the Alexandrian School forms the basis of considerable of our modern knowledge.

* * *

The first great medical school of antiquity was situated in Alexandria. The beginning of the Alexandrian School dates from 305 to 280 B.C. It should be understood that in spite of the fact that Alexandria is in Egypt there is no evidence that the physicians of this school had made any use of the medical doctrines of the earlier Egyp-

tians. The Alexandrian School carried forward the Greek tradition rather than the Egyptian; it was in everything essentially a Greek institution. An account of the work of the chief Alexandrian physicians has been preserved to us by Pliny, Celsus and Galen. The most distinguished names connected with the Alexandrian School of medicine are Herophilus and Erasistratus who lived during the fourth century B.C. They were the originators of dissecting. Galen was himself at a much later time a pupil of the Alexandrian School. Herophilus, the first scientific anatomist, was born at Chalcedon, a Greek city, but nothing is known of his early years. He was also the first to make important studies on the nervous system. He showed the relation of the larger nerves to the spinal cord and brain and was the first to distinguish between motor and sensory nerves. Both Herophilus and Erasistratus considered the arteries filled with air. Herophilus noted the difference between the cerebrum and the cerebellum. He was the first to describe the torcular herophili and the meninges of the brain. Among other anatomical discoveries he made must be mentioned the parotid and submaxillary glands, the pulmonary artery, the seminal vesicles, the prostate gland, the retina, the vitreous and the ciliary body. Herophilus also counted the pulse by means of a water clock and described the aortic and pulmonary valves, the chorda tendinæ and the ramification of arteries and veins.

* * *

Erasistratus, his associate, was a native of the Island of Ceos near the coast of Attica. He too devoted much time to anatomy but particularly to physiology. Encouraged by the Ptolomies, the kings of Egypt, in the way of supplying all the human dissecting material, much progress was made. "They were permitted the bodies of criminals in order that in this way they might learn the location, color, shape, size, construction, hardness, softness, smoothness, nature of external surface, protruberances and recesses of the individual organs during life," for, "it is permissible to sacrifice the lives of a few criminals if many worthy persons may thereby be permanently benefited in health or their lives prolonged." Those opposed argued: "This practice is not only cruel, but useless, and at the same time it derogates from the dignity of the Healing Art, which is intended to be a blessing and not a source of pain to man; for those in whom the abdominal cavity is first opened and then the diaphragm divided, die before it is possible to make the scientific examination 'during life' which constitutes, as it is claimed, the justification for this procedure."*

Of the work of Erasistratus it is recorded that it consisted in shedding new light on the lacteals, the valves of the heart and the nerves. He also wrote on the *pneuma* or the breath, to which he assigned the most important role in the maintenance of life. According to him the *pneuma* was drawn into the lungs through the trachea, thence to the terminals of the bronchial tubes, which conveyed it to the aorta, from which it was forced to all parts of the body—probably the earliest account of the physiology of respiration. Not much advance was made from this position until the work of Harvey appeared in the seventeenth century.

In methods of treatment he eliminated blood-letting except in rare cases, in spite of the fact that he considered plethora or excess of blood the chief cause of disease. Among the contemporaries and successors of Erasistratus blood-letting was an almost universal method of treating all manner of diseases. He did not favor the use of purgatives but is said to have had recourse to enemata and emetics with discretion. Fasting and abstinence and exercise were among his therapeutic methods. He practised surgery as well as other branches of medicine.

* * *

The followers of these pioneers receded from the examples of carefulness in research and boldness, particularly in surgical procedures, and fell into speculative medicine which led to the decline of the Alexandrian School. The result was the development of a number of medical sects—thirty-four in all. The school, according to Sir Clifford Allbutt, came to an end in its iatrosophisical phase on the destruction of Alexandria by the Arabs in 640 A.D.

The decline of the School of Alexandria was practically assured with the absorption of Egypt into the Roman Empire (50 B.C.)

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*From Puschmann, quoted by A. H. Buck in The Growth of Medicine from the Earliest Times to about 1800. The report that the Alexandrians dissected living men originated with Celsus, whose pronouncement was made 300 years after their day. The statement has not been confirmed by Galen.

and the extinction of the Ptolemaic dynasty with the death of Cleopatra (30 B.C.). Its continuance to the time of the destruction of the city by the Arabs was characterized by much restricted activity and almost no originality. Rome until its decline and fall was to be the mistress of the world.

* * *

Roman medicine before the Greek influence was much more primitive than one would expect of a nation that had attained such a high standard in other realms of thought. It was a mixture of medicine with magic and religion. Even with the advent of Greek medicine the Roman intellectual fields were comparatively unfertile so that the Latin races produced no physician of eminence. The earliest teaching of medicine in Rome by the Greeks was of a private character in which the instructor took his pupils with him on his visits. Then followed groups of eager students combined into colleges. The instructors received for their remuneration only the pupils' fees. Not until the eighth decade of the first century A. D. was medical teaching carried on at public expense.

The earliest medical work of merit in Latin was the De re Medica (A.D. 30) the work of Celsus. It was a compilation from the Greek. This work begins with a sketch of the history of medicine and ends with a section on surgery. It also discusses diet and therapeutics as well as disease, both external and internal.

The Romans produced no eminent physician, yet their genius for organization enabled them to develop to a high degree preventive medicine. Much attention was given to drainage and to sanitation. Rome was provided with sewers as early as the sixth century B.C. The *Cloaca Maxima,* the main sewer even at the present day, had its origin at that time. As early as 450 B.C. it was unlawful to bury the dead within the city walls. Julius Caesar, during the first century B.C., sought to encourage the development of the healing art by conferring citizenship on all medical practitioners. About the year 160 A.D. public physicians were appointed to attend the poor. It is natural to suppose the Roman physician filled an important place in the army. There was, however, complete subordination of the medical attendant to all army officers. No special encouragement was given them in the way of ranking medical officers and they accordingly made no contribution to Roman medicine.

Rome's greatest contribution to medicine was the hospital system in keeping with her known genius for organization. The earliest Roman hospital was the military *valetudinarium* and from this early method of caring for wounded and sick soldiers there developed *valetudinaria* for the civilian population.

Note: For a full account of the famous Alexandrian School the reader may consult with advantage Greek Medicine in Rome by Clifford Allbutt, Chapter V; The Growth of Medicine by A. H. Buck; An Introduction to the History of Medicine by Cumston; The Evolution of Modern Medicine by Sir William Osler; The History of Medicine by Max Neuberger, Vol. I; and A Short History of Medicine by Charles Singer.

ODDS AND ENDS

The greatest school of all is the university of the world; the greatest teacher is experience; the greatest textbook is the book of observation; the greatest disciplinarian is a few hard knocks; but the tuition is apt to be very expensive.

* * *

According to *The World Tomorrow,* every family in the United States would have $10,961 of capital and annual income of $2,366, if the national wealth and income for 1930 could be divided equally between all the families of the country. The total national wealth of the United States in 1930 amounted to 329.7 billions of dollars and the national income for the same year was 71 billions of dollars. The per capita wealth in 1930 was $2,677 as compared with $2,977 in 1929, and the per capita income was $579 in 1930 as compared with $701 in 1929. If the capital and income of the nation were divided according to the above hypothesis it would be interesting to know what time would elapse before the present inequality in the distribution of wealth would be again attained.

* * *

Ogden L. Mills, Secretary of the United States Treasury, writing in the *Review of Reviews,* says, "I have the very distinct impression that whereas up to the last quarter of 1931 economic factors exercised the preponderating influence, from October until January, 1932, psychological influences have played the leading part. During those three months the psychology of fear was written in large letters on every step of the downward course. . . . If the psychology of fear can be dispelled, there is real ground for the belief that the foundation is now sufficiently firm to justify our vigorously addressing ourselves to the task of reconstruction."

MAN WANTS BUT LITTLE HERE BELOW

According to Maurice Sugar the demands made upon the Ford Motor Company by the deputation of unemployed who endeavored to visit the plant on March 7, were:

(1) Jobs for all laid-off Ford workers; (2) immediate payment of 50 per cent of full wages; (3) seven-hour day without reduction in pay; (4) slowing down of the deadly speed-up; (5) two fifteen-minute rest periods; (6) no discrimination against Negroes as to jobs, relief, medical service; (7) free medical aid in the Ford Hospital for the employed and unemployed Ford workers and their

families; (8) five tons of coke or coal for the winter; (9) abolition of service men (spies, police, et cetera); (10) no foreclosures on homes of former Ford workers—Ford to assume responsibility for all mortgages, land contracts, and back taxes on homes until six months after regular full-time reemployment; (11) immediate payment of lump sum of $50 winter relief.

SPILLING INK

Ah, me, ma ink is spilled again,
Blots, on ma desk an' fingers ten,
Ma clumsy efforts in ma den
Are scarcely worth a try again,
But, Gray an' Burns an' Poe, ye ken,
Ga'ed tae th' world their song tae men,
By drops o' ink upon their pen.

A've read ma Osler, through an' through,
A've gan tae clinic's, Mayo's too,
A've worshiped Lister, paid ma due
Tae Syme an' Simpson, Keen, Agnew,
But still a'm me, not worth a boo,
Yet, when St. Peter's door's in view,
Ah'll tell him straight, ah don't owe you.
Guid Nicht

WEELUM.

NEITHER A THING OF BEAUTY NOR A JOY FOREVER

The poet of the Manchester Guardian produces the following on the announcement of horticultural research to the effect that striped tulips derive their splendor from a virus which is analogous to the known virus diseases of man. For instance it is said that a green fly dining off a tulip infects the tulip so that the flower, which is the victim of infection, bursts forth with greater beauty. The poem goes on to enlarge upon the effect of infection in man with the conclusion that the virus which produces the common cold leaves its victim much less an object of beauty.

How wonderful is Nature's plan!
But rather hard, it seems, on Man.

Consider tulips how they grow
In stately splendour row by row,
Equipped, when in a state of health,
With beauty in exceeding wealth;
While, what is more, if they fall ill
They then appear more beauteous still—
E'en as the unassuming oyster,
A resident in regions moister,
Emits, or so I've seen it stated,
The precious pearl when irritated.

For, lo! in tulips at their ease
A simple colour scheme one sees,
Each nodding to its upright fellow
In mauve, or red, or pink, or yellow.
But after that there drifts along
The eager aphis going strong—
A nasty little bug, I feel,
Who only calls to make a meal,
And, what is worse, is then desirous
Of paying for it with a virus.
Yet good results though bad begins,
And in the end the tulip wins,
For it is now by experts written
That when the bug has called (and bitten),
These tulips of the plainer types,
Break out in prized and gorgeous stripes.

Consider, then, the human case
Where, too, the virus has its place;
Consider one we know of old—
That virus of the common cold.
When that foul fiend its woe unleashes,
Does that improve the human species?
Do those by that affliction tried
Then grow in beauty side by side,
Acquiring, with each sneeze and snort,
A loveliness of rarer sort?
Do they become, with each catarrh,
More gay and beautiful by far?
Is that the common human lot?
To put it frankly it is not.
Perchance the nasal organ grows
A shade more like the red, red rose,
But that is not a sign of grace
Nor does it suit the human face.
The virus of the common cold
Leaves no one nicer to behold.

The face is plain, the case is flat—
So there we are, and that is that;
Tulips, like lilies of the field,
Succeed in realms where we must yield.
And I will trouble you no more
Beyond observing (as before)
How wonderful is Nature's plan—
But rather hard, it seems, on Man!

GENERAL NEWS AND ANNOUNCEMENTS

Dr. H. W. Plaggemeyer and Dr. Carl G. Weltman of Detroit addressed the April meeting of the Shiawassee County Medical Society, at Memorial Hospital in Owosso, April 14. There was a large attendance and the addresses on the subject of the Prostate Gland and its diseases were most interesting. Dr. Weltman exhibited a movie made of himself while operating for prostatic obsrtuction with the McCarthy resectoscope.

The Bulletin of the Wayne County Medical Society has published a list of medical papers with their authors and the Journals in which the articles have appeared for the six months ending March 1, 1932. The papers have appeared in a number of the national and special Journals. There were seventy-three published papers, of which the largest number to appear in any one publication, twenty-two per cent, appeared in the Journal of the Michigan State Medical Society.

Statistics issued by the Detroit Department of Health reveal a marked decrease in Detroit's tuberculosis death rate and an increase in the number of patients whose condition improved. The death rate of patients at the William H. Maybury Sanitarium declined from 25.8 per cent in 1927 to 10 per cent in 1931, according to the report, and the percentage of patients whose condition improved rose from 45.4 in 1927 to 68.9 in 1931. The death rate in every other common communicable disease also fell from normal during 1931.

Dr. H. W. Plaggemeyer, President of the Wayne County Medical Society and Dr. Louis J. Hirschman of Detroit provided the scientific program at a meeting of the Seventh Councillor District held on April 19th at Port Huron. Dr. Plaggemeyer spoke on Modern Surgery of the Prostate Gland and

showed moving pictures of the transurethral operation. Dr. Hirschman spoke on the Surgical Treatment of Internal Hemorrhoids. Dr. Carl F. Moll, President of the Michigan State Medical Society, was present and delivered a splendid after dinner address.

AMERICAN MEDICAL GOLFERS PLAY IN NEW ORLEANS, MAY 9

The American Medical Golfing Association will hold its Eighteenth Annual Tournament in New Orleans on Monday, May 9, 1932. The thirty-six hole match will be played over the beautiful and interesting New Orleans Country Club course, followed in the evening by the golfers' banquet and distribution of prizes. Approximately fifty trophies and prizes will be distributed to winners in the various events. Dr. Frank A. Kelly of Detroit is President of the American medical golfers, Dr. Homer K. Nicoll, of Chicago is First Vice-President, and Dr. John Welsh Croskey of Philadelphia is Second Vice-President. Invitations to attend the American Medical Golfing Association tournament in New Orleans are being sent to members from the Executive Office in Detroit. Any male Fellow of the American Medical Association in good standing is eligible to membership in the Golfing Association. Physicians are invited to become associated with this active social organization which offers much in good sportsmanship and friendship. Applications may be procured by writing Bill Burns, Executive Secretary, 4421 Woodward Avenue, Detroit, Michigan.

OBITUARY

DR. NEWELL E. LAVELY

Dr. Newell E. Lavely died at his home the first week in April following an illness of three weeks. Dr. Lavely was born in Bay City. He received his early education in Bay City schools and later attended the University of Michigan, graduating from the medical school in 1920. He came to Detroit two years later. He served his interneship at Grace Hospital, Detroit. Besides his widow, Mildred, Dr. Lavely is survived by two daughters, Mary and Ruth; his mother and father, Mr. and Mrs. Peter Lavely, Detroit, and three brothers, Edwin of Flint, and Elton and Morgan, both of Detroit.

DR. J. G. STONE

Dr. J. G. Stone of Windsor, Ontario, died very suddenly April 4 after leaving his office. Dr. Stone was a non-resident associate member of the Wayne County Medical Society. He limited his practice to X-ray and was a member of the Detroit X-ray and Radium Society and its president in 1930.

DR. JOSEPH E. MAUNDERS

Dr. Joseph E. Maunders, who practised in Detroit, died at his home in Birmingham April 13 of apoplexy. Dr. Maunders was at one time a congregational minister. He leaves a wife and four children. Joseph, Virginia, James and Donald.

DR. E. T. MILLIGAN

Dr. E. T. Milligan, a former Detroit physician, died at his home at Santa Monica, California, on March 31, 1932. Dr. Milligan was a non-resident associate member of the Wayne County Medical Society. He was well known to the older members of the Wayne County and Michigan State Medical Societies. Born in Dublin, Ireland, in 1855, he came to the United States when he was eighteen years of age. He graduated from the Michigan College of Medicine and Surgery in the class of 1892. Dr. Milligan is survived by his wife and three sons, Dr. F. J. Milligan of Santa Monica and Harry C. and Clarence P. Milligan, Detroit attorneys.

DR. LEWIS C. KNAPP

Dr. Lewis C. Knapp of Monroe, Michigan, died at Ann Arbor on April 5, 1932, at the age of sixty-four years. Dr. Knapp was born on a farm near Strasburg and spent his early life on the farm, receiving his education in the public schools of Monroe. He entered the University of Michigan in 1888 and graduated in medicine three years later. He was married in 1897 to Miss Alida Kemmerling, who survives him. Dr. Knapp took an active part in the affairs of his town. In addition to holding civic positions he was President of the Monroe State Savings Bank. He was also a director of the Consolidated Paper Company and at the time of his death he was a director of the First National Bank. During the forty years of his medical career Dr. Knapp built up a large practice. He was a member of the Monroe County and Michigan State Medical Societies.

DR. GEORGE H. SHERMAN

Dr. George H. Sherman of Detroit died at Palm Beach, Florida, April 19. He was born in Napoleon, Ohio, May 23, 1858. Graduating from Northwestern University, he came to Detroit and established a practice on St. Aubin Ave. Later he founded the Sherman Laboratory at 14600 E. Jefferson Ave. He was a member of the Wayne County Medical Society and the American Medical Association. For many years Dr. Sherman was engaged in the manufacture of vaccines. Surviving are his widow, Mrs. Emilie Sherman; three daughters, Mrs. Edgar O. Marty, Plattsville, Pa., Mrs. Alexander M. Rovin and Mrs. Clarence Wehly, both of Detroit; one son, Arthur G.; and a sister, Mrs. Nellie Saalfeld.

MEDICAL ECONOMICS

CAN WE AFFORD STATE MEDICINE?

J. G. R. MANWARING, M.D.
FLINT, MICHIGAN

Part III

THE COST OF GOVERNMENTAL MEDICAL SERVICE

It is becoming more and more evident that there is a strong movement on foot to make the practice of medicine a function of government. Articles are appearing in all sorts of places advocating the idea, attacking the cost of medical service and advocating that the government render this service.

Is government by bureaus so efficient we can afford to make this move? Would it be an economy?

Ex-president Coolidge said:

"No method of procedure has ever been devised by which liberty could be divorced from local self-government, no plan of centralization, has ever been adopted which did not result in bureaucracy, tyranny, inflexibility, reaction, and decline. Of all forms of government, those administered by bureaus are about the least satisfactory to an enlightened and progressive people. Being irresponsible they become autocratic, and being autocratic they resist development. Unless bureaucracy is constantly resisted it breaks down representative government and overwhelms democracy. It is

the one element in our institutions that sets up the pretense of having authority over everybody and being responsible to nobody."[1]

Senator Hiram Bingham says:

"Senator Underwood once said: 'What a paternalistic Government proposes to do for the people, in the end the people pay for, with the greatly added price of burdens and commissions to those who engage in its administration!' But the cost and burden of government is not the main equation involved in personal government; it is restricted freedom; it is often dishonest and usually Pharisaical interference with the individual in the home, the work-shop, or the business office; in his religion, his recreation, yes, verily, in life itself.

"Their tendency is to grow larger and more powerful rather than smaller and weaker. The bureaucrat is always sure that he can operate more effectually in the public interest if he is given more money and more power and more responsibility. Rarely, if ever, does a bureaucrat suggest that there is any danger in too much government. On the contrary, he sincerely believes that his powers are only going to be exercised benevolently.

"The bureaucrat naturally is going to make his job seem important and necessary as long as he possibly can."[2]

It is true that commissions, bureaus and other agencies to which are delegated governmental functions tend to grow and hazard the future by their cost.

"In an address delivered in Kansas City on Aug. 31, 1931. Administrator Hines of the Veterans' Bureau is quoted as making the following statement: 'The government's annual outlay for benefits to former service men amounts to about $900,000,000.' Think of that. In the same address he is quoted as making the following statement: 'The government is spending $20,000,000 annually as compensation to 400,000 World War veterans and dependents for disabilities as a result of war service.' Think of that as veterans. Twenty of the $900,000,000 appropriated by Congress is going directly as compensation to veterans with service connected disabilities and their dependents. To be exact, it represents ***one forty-fifth*** of the total amount expended. Contemplate for a moment those administration costs. I simply cannot believe those figures, but they are exact quotations from the associated press news items. But if the director is in error by 100 per cent, still think of what the proportion would be. Think of what an enormous proportion of the money appropriated by Congress for the benefit of veterans adheres to administrative red tape as it filters through, and the relatively small proportion that finally gets to the pockets of veterans."[6]

Frank H. Peckham, Vice-President of the Sentinels of the Republic, comments as follows:

"What of some of the many extra-Federal activities that have been carried on thus far? Despite the fact that during the past twenty years numbers of Federal bureaus and agencies have been using millions of dollars ostensibly to aid the farmers, the farmers' economic condition has grown worse and worse. During the same period, various Federal agencies have been spending millions to aid and stimulate industry, yet we have had a nationwide industrial collapse. Also, for example, consider the activities of the Federal Children's Bureau under the now defunct and discredited Maternity Act. For seven years, that Bureau spent millions of dollars, ostensibly to save mothers and babies. Yet, during 1928, the last calendar year while that Act was in force, there was a very material increase in maternal and infant mortality rates over those of the preceding year. Another bureau, part of a great governmental machine supposedly devoted to important national affairs, has kept itself busy telling housewives of the country how to arrange their kitchen furniture, how to make clothing, and furnishing recipes for cooking, all of which information could readily be obtained from a multitude of publications everywhere available.

"Is it not time for us to get rid of various frills and furbelows in government and get back to a minimum of governmental activities? American mothers, with the aid of American physicians, can take care of themselves and their babies, without advice from a Federal bureau in Washington. Farmers are beginning to realize that a multitude of governmental activities in their behalf have proven delusions and snares. Industry is finding that governmental bureaus and commissions and committees are poor substitutes for economic laws. It is time that we ceased to look to some governmental agency at Washington for a solution of our troubles."[3]

Isiah Bowman states that the Reclamation Service has put over twenty-four irrigation projects and has spent many millions of dollars in doing this in the past 28 years. The net result to date has been to settle on these projects 140,000 people instead of the expected million or so. He states these projects are all economically unsound and that is why the government is induced to develop them.

If the projects are sound, private capital is always forthcoming for them.[4]

And now we have started the Boulder Dam, a $500,000,000 project which will bring in a large area of irrigated land not needed and is sure to be an economic failure. Such land is too expensive for grain crops and can only be used in this country for truck gardening and citrus fruits. We have an over-production now in these commodities so that a portion of the citrus crop is destroyed to keep up prices.

The Post Office Department is often cited as an example of efficiency of government in business. Yet it was only a few years ago that the papers carried the news that one of our big express companies offered to take it over, give the same service and cut the rates in half.

Where governments are subject to popular vote it really seems that economy in administration is impossible. It is a fallacy to compare for instance pre-war medical service in Germany with any democratic country. Under a stiff monarchy things can be done efficiently and economically.

The growth of departments in our government has been tremendous, so much so that in one way or another a large part of our adult population is on the government pay roll.

"As a result of the enormous increase in public employes and pensioners, all branches of government in this country are supporting either wholly or in part, more than ten million people. Think of it! One-seventh of the adult population of the country supported wholly or partially by taxation. And the number is increasing daily. Every month the Federal government sends pension cheques to one million, one hundred thousand persons—a number which increases every day. Others receiving part or all of their support from taxable resources of cities, states, and the nation are:

Federal employees of all classes	988,000 persons
Tax-supported insane institutions	286,000 persons
Prisoners, daily average	220,000 persons
Federal Hospitals population	27,700 persons
School teachers	1,124,000 persons
State, City and county payrolls	1,300,000 persons
Directly or indirectly on roads	2,487,000 persons
Directly or indirectly, working on public construction	900,000 persons

"The total number of persons in these groups is 8,431,000 and this figure does not include pensioners of cities, states, counties and towns, or persons receiving bonuses or other forms of financial aid from any division of the government. There has been an increase of some 6,000 Federal employees in the past year. No public charities are included in these figures. It is, of course, a duty of the government to be generous to its employees and deserving pensioners, but in considering our public expenditures we should not lose sight of natural economic loss and the dangers of over-taxation.

"The picture of a nation as young and promising as the United States, drifting in this direction, is one of a depressing nature. The total number of gainfully employed persons in the country is, at best, 46 millions, and the total adult population is more than 70 millions. Thus, if we subtract from the gainfully employed, those persons classified as gainfully employed in the business of government, we find that for every four gainfully employed in the country there is one person supported wholly or in part by the government. One for every four!"[5]

Can any student of government honestly believe that government service can be really economical?

Can he believe that government medical service would be given at less cost to the people than it is now?

Can he believe that there will not be many more employed than at present to render an equivalent service?

Fat jobs, political appointments, voting machines of large numbers of employees, "buck-passing," paid retainers of influential political bosses, unwarranted local expenditures for political influence and all the related children of government folly would attach themselves to any system of state medicine, so that as a measure of economy it would fail.

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3. Peckham, Frank H.: Radio address, Dec. 27, 1931.
4. Bowman, Isiah: The Pioneer Fringe. p. 767.
5. Metcalf, Senator Jesse H.: The Menace of Paternalism. Radio address, Dec. 20, 1931.
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608 1ST NAT. BANK BLDG.

SOCIETY ACTIVITY

PROFESSIONAL FEES

Every now and then from one source or another there comes in a complaint as to the fee that was charged by a physician or surgeon. As a rule the reply is that this is a contractual matter between the patient and the doctor and must be adjusted by the two parties, unless arbitration is agreed upon.

Once every so often there is seen the most flagrant form of gouging. *California and Western Medicine* imparts the following illustration:

The Concrete Mid-West Case.—Let us go back to the itemized statement of the mid-west physician, a young doctor out of college only some five years or so, who is in general practice and is not an orthopedic or surgeon specialist, and who sent to an elderly woman with a fractured femur (having total means amounting to about ten thousand dollars), a statement for professional services amounting to $4,900; and who, when requested to modify this bill, as above indicated, refuses to do so. The copy of the statement which we have been given, with deletions of identifying place, is as follows:

October 15, 1930.

To the Estate of .....
The ..... National Bank of .....
City), Executor.

February 2, 1930.—Physical examination, diagnosis, application of splint, etc.	$ 250.00
February 3, 1930.—Operation, reduction of fracture, application of body cast, etc.	1,500.00
February 3 to April 15, 1930.—145 hospital visits, including treatment of fracture and intravenous injection for chronic arthritis, and treatment of ulcers at $10 per visit (Editor's Note. A period of 70 days)	1,450.00
March 10, 1930.—Operation, removal of cast, reapplication of bivalved cast, curettement of ulcers and treatment of ulcers	850.00
April 15 to May 4, 1930.—Forty home visits, including treatment of fracture, intravenous injections for arthritis, treatment of ulcers at $15	600.00
May 4, 1930.—Night house visit, five hours' detention with patient, injection of stimulants, artificial respiration, etc., attempting to save patient from death, at $50 per hour	250.00
Total for professional services rendered	$4,900.00
Paid on account 2/9/30, $85; 2/17/30, $35; 2/25, $35; 3/1, $35; 3/8, $35; 3/15, $35; 3/22, $35; 3/29, $15.	
Total paid on account	$ 310.00
Amount due	$4,590.00

Readers of *California and Western Medicine* can come to their own conclusions as to the justice of charges such as the above; and can estimate for themselves the effect which publicity of such charges will have in that particular community, in forming lay opinions on the local medical profession's standards of fair dealing.

Recently opinion was asked by an administrator as to the following itemized statement for services rendered over a period of three weeks to an aged man who had sustained a fractured femur from the results of which he died.

Copy of Statement

Sept. 7.	X-rays ($25.00) Splint ($50.00) Setting ($275.00) Calls to Hospital, consultation treatment of shock	$ 450.00
Sept. 8.	Dr. ——— 3 calls @ $3.00	9.00
	Dr. ——— Consultation	15.00
Sept. 9.	Dr. ——— 4 calls @ $3.00	12.00
Sept. 9.	3 Glucose intravenous @ $20.00	60.00
Sept. 10.	Dr. ——— 3 calls @ $3.00	9.00
Sept. 10.	Dr. ——— consultation	15.00
Sept. 10.	2 Glucose @ $20.00	40.00
Sept. 11.	Dr. ——— 3 calls @ $3.00	9.00
Sept. 11.	Auto Injection of Blood into Break	50.00
Sept. 12	Dr. ——— 3 calls @ $3.00	9.00
Sept. 12.	2 Glucose	40.00
Sept. 12.	Drs. ——— ——— resetting new cast	250.00
Sept. 13.	Dr. ——— 3 calls $3.00. 1 night call	10.00
Sept. 13.	1 Glucose	20.00
Sept. 14.	Dr. ——— 2 day calls, 1 night call @ $4.00	10.00
Sept. 14.	Dr. ——— consultation	15.00
Sept. 14.	3 Glucose @ $20.00	60.00
Sept. 15.	Dr. ——— 3 calls @ $3.00	9.00
Sept. 15.	2 Glucose	40.00
Sept. 15.	Dr. ——— consultation	15.00
Sept. 16.	Dr. ——— 4 calls: 3 day, 1 night	13.00
Sept. 16.	3 Glucose	60.00
Sept. 16.	Dr. ——— consultation	15.00
Sept. 17.	Dr. ——— 4 calls, 1 night	13.00
Sept. 17.	Dr. ——— consultation	15.00
Sept. 17.	3 Glucose	60.00
Sept. 18.	Dr. ——— 4 day, 1 night calls	16.00
Sept. 18.	4 Glucose @ $20.00	80.00
Sept. 18.	Dr. ——— consultation	15.00
Sept. 19.	Dr. ——— 2 day, 1 night call	10.00
Sept. 19.	2 Glucose	40.00
Sept. 19.	Drs. ——— & ——— consultation	30.00
Sept. 20.	Dr. ——— 5 calls, 4 day, 1 night	16.00
Sept. 20.	4 Glucose	80.00
Sept. 20.	Dr. ——— consultation	15.00
Sept. 21.	Dr. ——— 6 calls, 5 day and 1 night	19.00
Sept. 21.	Drs. ——— & ——— (con. and preparation to move home)	25.00
Sept. 21.	5 Glucose	100.00
Sept. 22.	Dr. ——— 5 calls, 4 day, 1 night	16.00
Sept. 22.	4 Glucose	80.00
Sept. 23.	Dr. ——— 3 calls, 2 day, 1 night	13.00
Sept. 23.	3 Glucose	80.00
Sept. 23.	Dr. ——— consultation	15.00
Sept. 24.	Dr. ——— 3 calls, 2 day, 1 night	13.00
Sept. 24.	3 Glucose	60.00
Sept. 24.	Dr. ——— consultation	15.00
Sept. 25.	Dr. ——— 4 day, 1 night calls	16.00
Sept. 25.	4 Glucose	80.00
Sept. 26.	Dr. ——— consultation	15.00
Sept. 26.	Dr. ——— 5 calls, 4 day, 1 night	16.00
Sept. 26.	4 Glucose	80.00
Sept. 26.	Dr. ——— consultation	15.00
Sept. 27.	Dr. ——— 5 calls, 4 day, 1 night	16.00
Sept. 27.	4 Glucose	80.00
Sept. 27.	Dr. ——— consultation	15.00
Sept. 28.	Dr. ——— 5 calls, 4 day, 1 night	16.00
Sept. 28.	4 Glucose	80.00
Sept. 28.	Dr. ——— consultation	15.00
Sept. 29.	Dr. ——— 5 calls, 4 day, 1 night	16.00
Sept. 29.	4 Glucose	20.00
Sept. 29.	Dr. ——— consultation	15.00
Sept. 30.	Dr. ——— 4 calls, 3 day, 1 night	13.00
Sept. 30.	3 Glucose	60.00
Sept. 30.	Dr. ——— consultation	15.00
Oct. 1.	Dr. ——— 3 day, 1 night calls	13.00
Oct. 1.	3 Glucose	60.00
Oct. 1.	Dr. ——— consultation	15.00
Oct. 2.	Dr. ——— 3 calls, 2 day, 1 night	10.00
Oct. 2.	2 Glucose	40.00
Oct. 2.	Dr. ——— consultation	15.00
Oct. 3.	Dr. ——— 3 calls, 2 day, 1 night	10.00
Oct. 3.	2 Glucose	40.00
Oct. 3.	Dr. ——— consultation	15.00
Oct. 4.	Dr. ——— 3 calls, 2 day, 1 night	10.00
Oct. 4.	2 Glucose	40.00
Oct. 4.	Dr. ——— consultation	15.00
Oct. 5.	Dr. ——— 3 calls	9.00
Oct. 5.	2 Glucose	40.00
Sum Total		$3,016.00
Paid		50.00
		$2,966.00

It is instances such as these that cast reflections upon the entire profession. No one can uphold or defend the doctor rendering such statements. In law suits to collect one would have no alternative but to testify that the fee was exorbitant and some of the services not consistent with good practice.

SAVE YOUR PATIENT'S MONEY

Proprietary articles are sold at a price fixed so as to yield a handsome profit to the manufacturer. The buyer pays the profit. In prescribing drugs why put this cost burden on your patient? The patent rights of many of these drugs have expired. Reputable chemical manufacturers now make and sell to druggists the identical chemical at a price far below that charged for the trade name article. Compare this list as printed by the *Journal of the New Jersey Medical Society* and save your patient's money.

Proprietary	Price: 1 oz.	Chemical	Price: 1 oz.
Phenacetin	$ .63	Acetphenetidin	$ .20
Aspirin Bayer	.85	Acetylsalicylic acid	.15
Veronal	3.00	Barbital	.70
Atophan	2.75	Cinchophen	.35
Duotal	1.07	Guaiacol carbonate	.27
Urotropin	.60	Methenamine	.13
Tolysin	2.25	Neocinchophen	.97
Luminal (in ½ oz. carton)	6.90	Phenobarbital	1.75
Trional	1.90	Sulphonethylmethane	.50
Sulphonal	1.70	Sulphomethane	.40
Diuretin	1.85	Theobromine sodium salicylate	.30
Aristol	1.80	Thymol iodid	.68
Total	$25.30	Total	$6.40

MALPRACTICE SUITS

To the Members of the Michigan State Medical Society—Greetings:

Your attention is called to the increasing number of malpractice suits being brought against members of this Society. They are of every type, not only the general practitioners but the specialists also.

We ask the coöperation of our members in being extremely careful how they talk about cases of other physicians which come into their hands. Loose talk—and even the expression, "Who was your doctor before in this case?"—has been the beginning of unjust suits for damages for alleged malpractice.

Fracture cases continue to be the principal cause of trouble and, secondly, burns of different character.

No fracture case should ever be treated without an X-ray before and after reduction and in between, and then at the time of the removal of the splints or casts. Many doctors state that the patients are unwilling to pay for the costs of X-rays, and in such instances the doctors should obtain written statements, witnessed by two people if possible, that the patients do not want X-rays, although they have been recommended and insisted upon by the doctors. This is the only way to protect yourselves, for when you are brought into Court and are unable to produce X-rays, it will be easy to produce doctors to state that X-ray machines are in common and general use and that it is the usual and ordinary practice in nearly every locality to use an X-ray in the diagnosis and reduction of fractures.

The law requires a doctor to act as a usual and ordinary physician and surgeon would under similar circumstances in the locality in which he practices and like localities.

There have been several instances recently of members of the State Society giving testimony against fellow members. This should be done only when a member so testifying is thoroughly informed on his subject, and not until he is thoroughly convinced that the doctor has not only been guilty of mistake in both diagnosis and treatment but that if he had used the skill of the average doctor in his and like localities, such treatment would not have been given or omitted, and that because of such omission or commission, damage actually resulted. It should always be borne in mind that a doctor cannot follow mathematical and mechanical methods of decision, but must use his best judgment, and if he does that honestly and conscientiously and follows the practice of the average doctor in his community, he should not be held for damages. From some instances that have been reported to the Medico-Legal Committee recently, it would seem that some doctors were interested in securing a fee for testifying, without justification, against other members of the Society.

The Committee will be glad to receive suggestions from any member of the Society at any time in connection with Medico-Legal matters.

Very truly yours,

MEDICO-LEGAL COMMITTEE

By WILLIAM J. STAPLETON, JR., M.D.
Chairman

ANGUS MCLEAN, M.D.
J. G. R. MANWARING, M.D.
J. D. BRUCE, M.D.
EARL I. CARR, M.D.

COUNCILOR'S REPORT

Port Huron, Mich.
April 8, 1932.

Secretary State Medical Society:

The following is a brief report of conditions in the Seventh Councilor District.

I have had personal interviews with the officers of Saint Clair, Sanilac, and Lapeer Counties. I have not been able to get in touch with the officers of Huron County, but have had some word from one of the oldest members of that society.

Saint Clair County continues to function well. Meetings are being held regularly and are well attended. We have the same trouble as in past years, in that a certain number of our members never attend our sessions, and feel that their obligations to our society are paid when a check for annual dues is remitted. This is detrimental to our best interests as it prevents any united action on vital matters when urgently needed.

We have had no deaths in the past year. At this time thirty out of forty-five members have paid their dues. We have had two new members and rejected the application of another, who had moved here recently from Wayne County.

I have attended several meetings in both Lapeer and Sanilac Counties. They are both doing excellent work. They are holding combined meetings at times and their members are devoted to their societies. They have had unusually good programs. As an example—on April 7 a combined meeting was held at Marlette with an attendance of forty-seven. Dr. Plinn Morse of Harper Hospital was the speaker. I can only wish that other county units would show the same spirit that is manifest in these two.

In both counties dues are well paid up. There is very little friction and much good fellowship.

Huron County is not reorganized. I cannot get in close touch with the members. There are few doctors in the county, and my recommendation is that they join with Sanilac as the Sanilac-Huron County unit.

We have succeeded in having four men in Lapeer County arrested for practicing without license. Their trials will come up shortly. In Sanilac, I am investigating a complaint that an osteopath is writing prescriptions and that a druggist is filling them. Under our present laws, it is difficult to get action in this case, but I believe that the State Board of Registration in Medicine could urge the Pharmacy Board to act against the druggist for filling prescriptions written by an osteopath.

I feel well repaid for my work in rejuvenating the lagging counties in my district, and enjoy a feeling that the men in this district will continue their good work.

THEO. HEAVENRICH.

HEALTH EDUCATION

[An Activity Commended to County Societies]

Early in the spring of 1930 Jackson had a mild epidemic of smallpox. An order for generalized vaccination among school children and adults was immediately issued by the local health officer. Members of the County Medical Society were privileged to witness long lines of people, only too many of whom were their own good patients, presenting themselves to the health department for vaccination.

Soon after this incident the County Medical Society appointed a committee to study this situation and an analogous one dealing with diphtheria immunization which the health department had been carrying on since 1922. This proved to be the birth of what is now known as the Health Education Committee.

This committee, after a few meetings, realized very acutely that its problem was very much broader in scope and importance than was originally conceived. For instance: the action of our health department was merely the expression of a growing tendency for mass practice by agencies where the fee is very small, if any, and in no way commensurate with the services rendered, State Medicine if you will. It also realized that the work being done was very good and accrued to the marked benefit of the community, but it did not subscribe to the idea of public or private agencies doing it. On the other hand we felt quite certain that the medical profession as a group were falling down in the discharge of certain duties of a more public health nature. We felt that these conditions existed because we had not been alert enough to take advantage of the opportunities that were demanding attention.

As an outgrowth of this idea the committee thought the public was being deluged with a mass of information regarding their health that represented half truths or less,

from sources that were not in the least authoritative. The medical profession because of the supposed limitation of their code of ethics were sitting by and allowing this sort of thing to go on unchallenged.

With this general idea of our problem we sought and received the utmost coöperation from our health department and *succeeded in stopping public practice in the health department* and also the promise of discontinuance of the extensive diphtheria immunization campaign in the public schools. This latter was agreed to only after we had promised to be as successful in mass immunization as had the health department. When we demonstrated to them our willingness and sincerity they coöperated to the extent of putting their nurses out to contact those children who had not been immunized against diphtheria.

Another activity of the committee which in the past surely would have been relegated to the health department was a campaign to discover tuberculosis among high school and intermediate school children. This activity was very definitely sponsored by the Medical Society and with the sanction and hearty cooperation of the school and health authorities. This activity consisted of tuberculin testing as many pupils as possible and attempting to X-ray all positive reactors. This activity we feel has been well worth while and will be continued. It has very definite educational value as well as diagnostic excellence.

In addition to these things which in the past had been done by the health department we made a very definite attempt to reach the public with scientific authoritative facts presented by reputable individuals. This has been by means of the press, the pulpit, platform, radio, moving pictures and exhibits at the county fair. From all these sources we have disseminated facts which could be used by the public to their own advantage. Whenever possible the idea and advantage of periodic health examination was stressed.

We have set up a sub-committee on speakers to secure medical speakers for any organization that requests them. We really have gone farther and made contacts with various organizations requesting permission to furnish speakers for some of their meetings. We have been aided in this by a liaison committee from the Woman's Auxiliary of the County Medical Society. The enthusiasm and coöperation with which this phase of our activity has been received is very gratifying. The ministerial association, Parent-Teachers Association, luncheon clubs, women's clubs, child study clubs, etc., are very happy to and desirous of coöperating with us in furthering authoritative public health education.

In a measure at least we try to correlate our activity with that of reputable national organizations such as the National Tuberculosis Association, Child Health Association and many others. In this manner we are able to utilize the vast material and resources of the national associations with very little cost to ourselves except in time and effort and at the same time to use our organization to the definite benefit of the large groups. Truly, we are trying to make one hand wash the other for the benefit of the community at large.

To illustrate: at the present writing we are about to utilize the material furnished by the State Tuberculosis Association, combined with our annual tuberculin testing in the schools to make a definite drive to put before the public the desirability of early recognition of tuberculosis. We are placing speakers before Parent-Teacher groups, high school assemblies, church groups and luncheon clubs. We are having two fifteen minute periods over our local broadcasting station WIBM. We have placed talking trailers in four of our local theatres and we are following up with our tuberculin testing in the high and intermediate schools.

The committee with the sanction of the Medical Society has been given a fifteen minute period one day a week by our local radio station WIBM. Each week an unnamed member of the County Medical Society reads a prepared paper on a subject of public interest. We honor requests for special subjects to be broadcast and these papers are written by various members of the local society and edited by the committee.

Another thing that has been accomplished this year is the beginning of the casting off of our rigid and somewhat antiquated code of medical ethics. We feel quite happy that the Jackson County Medical Society sanctioned the printing of two cards which were to be included in the statements sent out from each office. These cards called attention to the desirability of: first, regular periodic health examination, and, second, the

absolute necessity of thorough-going immunization against diphtheria. By doing this the medical profession has discarded the rôle of passivity and assumed the better one of aggression. It is rightfully taking over the duty of guardian of the public health and is proud of it.

CARD 1

Have you had your annual Physical Examination?

Most incurable diseases pass through a curable stage.

Prevention is your best protection.

JACKSON COUNTY MEDICAL SOCIETY

CARD 2

DEPARTMENT OF HEALTH

JACKSON, MICHIGAN

Is Your Child Protected against Diphtheria?

Within recent years there have been over 200 cases of diphtheria per year in our city. Toxin-antitoxin has reduced this number to less than 10 per year for the past several years. Your Health Department is justly proud of this record.

If your children are unprotected, we earnestly advise you to

SEE YOUR DOCTOR!

Treatments are harmless. Over 20,000 have been given in Jackson in the last nine years without a single bad result.

The Health Department sponsored the introduction of diphtheria immunization, and has been active in giving the treatments through the schools and otherwise. This was done as a demonstration. We feel that our part of the program has been completed, and henceforth this work will be entirely in the hands of the private physicians, where it rightly belongs. SEE YOUR DOCTOR! He is prepared to do this work at a reasonable fee. If you are unable to pay, SEE YOUR DOCTOR anyway.

Lest there be some misunderstanding, the committee does not wish it inferred that all this has been attempted out of the bigness of its heart, for such would not be true. We realized the demand for knowledge on the part of the public and were not willing to see that demand filled by quasi-scientific material coming from questionable sources. Whether we did anything or not we realized that eventually the people who were our source of livelihood would live longer, happier lives and be more healthy because of this mass of information that was so freely accessible. It has been said that the practice of medicine consists of diagnosis and treatment. To this we would add two more parts, namely: keeping people well and making a living. Under the present status, if all people were well we would quite obviously have some difficulty making a living. Under the future status we can compensate for the loss of one type of practice by the gain of another happier and more appreciated type: periodic physical examination of presumably healthy individuals.

The committee wishes to justify its existence and rationalize its procedure by stating that the public is demanding knowledge about health and we are anxious to supply that demand from a reputable and authoritative source, and thereby bring just credit to the medical profession.

R. H. ALTER, *Secretary.*

SURVEY OF MEDICAL SERVICE AND HEALTH AGENCIES

STATEMENT OF PURPOSE

In accordance with the actions taken at the 1931 Annual Meeting of the Michigan State Medical Society and at a subsequent meeting of the Delegates the undersigned committee has accepted the task of studying the medical facilities of Michigan.

The committee enters upon its task with a full realization of its magnitude and with no preconceived opinions concerning the solution of medical problems in Michigan. It is hoped that everyone, public as well as profession, will understand that the sole objective of the committee is to gather valuable factual information upon which to base conclusions. No data will be collected for the sole purpose of criticizing any function or service now existent in medical care.

The committee's findings will be based entirely upon the facts presented. Through these facts it is hoped that the profession may be guided in the adoption of a definite policy concerning the social and economic aspects of medical care. Such a policy is vital to both the public and the profession.

To this end every individual either directly or indirectly associated in medical care in Michigan is asked to make a contribution. The most valuable contribution will not be one of money but of FACTS. Physicians, hospitals and other agencies will soon receive forms on which to present these facts. VOLUNTARY, EARLY, and COMPLETE CONTRIBUTIONS will determine, in great part, the value of these studies.

W. H. MARSHALL, *Chairman*
FRED A. BAKER
L. J. CHRISTIAN
BURT V. ESTABROOK
C. S. GORSLINE
F. C. WARNSHUIS, *Secretary Ex-officio.*

From the above it will be perceived that after several weeks of labor this special committee is now prepared to begin the compilation of informative facts. To secure facts upon which to base final conclusions assistance is required from every member and county society. A plea is now made that this aid be subscribed and that prompt replies be made to all inquiries that you receive.

This survey is a tremendous work. It embraces every factor related to health and medical service. Sound conclusions can not be formulated unless these facts are representative and frank, and come from every county. We bespeak this assistance.

The plan of study is inclusive. It will consume much time and many hours of labor. In the end, however, it is hoped that we will have a background that will impart actual existent conditions. Your patience is necessary, though the promise is made that the work will be completed as rapidly as possible. Your prompt replies will expedite the report.

That you may perceive the thoroughness and scope of study the following study plan is outlined:

STUDY PLAN

I. Appointment of Committees on Public Relations by County Societies

II. Appointment of special sub-committees by State Committee
- A. University Hospital Committee
- B. State Hospital Committees
  1. Tuberculosis
  2. Mental
- C. Other
  1. Laboratory committee
  2. Public health committee
  3. Industrial committee

III. Preparation and approval of "Purpose of Study" (Specimen 1)

IV. Preparation and approval of preliminary survey schedule (Specimen 2)

V. Preparation and approval of detailed individual schedules
- A. Physicians (Specimen 3)
- B. Hospitals (exclusive of mental and tuberculosis) (Specimen 4)
- C. Laboratories (exclusive of hospital laboratories) (Specimen 5)

VI. Preparation and approval of plans for special studies
- A. Economic structure of population
- B. Health Agencies (Specimen 6)
  1. Official
  2. Non-official
     a. Michigan Children's Fund
     b. Kellogg Fund
     c. Tuberculosis
     d. Other
- C. Industrial Service (Specimen 7a)
  1. Lodges, etc. (Specimen 7b)
- D. Welfare Service
- E. Tuberculosis (Specimen 8)
- F. Mental Diseases (Specimen 9)
- G. Miscellaneous
  1. Workmen's Compensation
  2. Contract Practice
  3. Experiments in provisions of service
  4. Medical Society activities
     a. Scientific
     b. Public Relations
  5. Study of patients discharged from hospitals
     a. Financial and social data

VII. Collection of Data
- A. Preliminary survey (Specimen 2) to be completed by local county society committees
- B. Detailed individual schedules
  1. Physicians' schedules (Specimen 3)
     a. Mailing of preliminary letter (Specimen 10) signed by local committee in each county to all physicians in private practice. (Enclose Specimen 1)
     b. Mailing of survey schedule, letter (Specimen 11) and return postal card (Specimen 12)
     c. Follow-up by local committee
        1. Telephone or personal contact
  2. Hospital schedules (Specimen 4 or abbreviated schedule)
     a. Mailing of schedules to local committees
  3. Laboratory schedules (Specimen 5)
     a. Mailing of preliminary letter (Specimen 13) signed by local committee
     b. Mailing of schedule and return postal card (Specimen 14)
     c. Follow-up by local committee
        1. Telephone or personal
- C. Special Studies
  1. Economic structure of population
     a. Distribution by counties
        1. Urban
        2. Rural
     b. Economic data
        1. Distribution of wealth
        2. Incomes
        3. Costs of living
        4. Other county data
  2. Health agencies
     a. Data from study for Governor's commission (Specimen 6)
  3. Industrial Service
     a. Detailed schedule distributed through Manufacturers' Assn.
     b. Schedule to other organizations such as fraternal, etc. (Specimen to be prepared)
  4. Welfare service
     a. Data from study for Governor's commission
        1. Afflicted adults
        2. Afflicted children
        3. Crippled children
        4. Mothers' pensions
  5. Tuberculosis
     a. Hospital service
        1. Detailed schedule (Specimen 8 to be prepared) to hospitals
     b. Clinical service
        1. Data from public health survey
     c. Field service
        1. Data from public health survey
  6. Mental diseases
     a. Hospital service
        1. Detailed schedules (Specimen 9 to be prepared) to public and private hospitals
     b. Clinical service
        1. Special local studies
  7. Miscellaneous
     a. Workmen's Compensation
        1. Analysis of laws
        2. Relation of physician to carriers
        3. Defects and merits
     b. Contract practice
        1. Data from physicians' schedules
        2. Data from industrial study
     c. Experiments
        1. Medical society care of indigents
        2. Group practice
        3. Diagnostic clinics
        4. Immunization by private practitioners
        5. Collection and loan services
        6. Other
     d. Medical society activities
        1. Data from local committees concerning scientific programs and public relations activities
     e. Patients discharged from hospitals
        1. Costs
        2. How costs were met

VIII. Analyses and Correlation of Data, by Counties in Michigan
- A. Physicians
  1. Distribution
     a. Urban
        1. Ratio to population
        2. Per capita wealth
     b. Rural
        1. Ratio to population
           a. Population per square mile

2. According to land valuation
a. Per cent of land in farms
3. Per capita wealth
2. Ages and years in practice
a. Urban
b. Rural
1. Correlate with above rural data
3. Professional training
a. Urban
b. Rural
4. Post-graduate training
a. Urban
b. Rural
5. Specialization
a. Urban
1. Types
2. Degree
3. Preparation
b. Rural
1. As above
6. Types of cases excluded from practice by general practitioner and partial specialist
a. Urban and rural
7. Equipment (to be determined by committees)
a. Urban and rural
8. The physician's "normal" week
a. Office practice
1. Night office hours
b. Home calls
1. Night calls
c. Hospital calls
9. Number of patients
a. Urban and rural
10. Dispensing of drugs
a. Urban and rural
11. Practice of preventive medicine
a. Urban and rural
12. Fees
a. Urban and rural
13. Financial adjustments for patients
a. Method
b. Fee and part-pay service
14. Hospital affiliations
a. Urban and rural
15. Gross cash incomes
a. Years 1928-1929-1930-1931
b. Urban incomes
1. General practitioners
a. Years in practice
2. Specialists (partial and complete)
a. Years in practice
b. Type of specialty
c. Rural incomes
1. General practitioners
a. Years in practice
b. Type of community
1. Correlate with county data
2. Specialists
a. Years in practice
b. Preparation
c. Type of community
1. Correlate with county data
d. Income from salary
1. Public health
2. Industry
3. Fraternal
4. Hospital
5. Insurance
6. Teaching
7. Research
e. Income from contract
16. Expense
a. Items
1. Urban and rural
17. Net incomes (1928-29-30-31)
a. Urban and rural
b. Same correlations as "Gross Income"
18. Total book accounts
a. 1928-29-30-31
19. *Normal* percentage of collection

B. Hospitals (Urban and Rural, Other than State Hospitals)
Note: Data from state hospitals will be analyzed and correlated with special studies, such as tuberculosis and mental diseases.
1. Distribution and ownership
a. Accredited
2. Growth of facilities
a. Ten-year period
b. Correlate with population data
3. Type
a. General
b. Special
4. Bed capacities
a. By type
5. Occupancy
a. By class of patient
1. Economic
2. Illness
6. Services
7. Staff
a. Type
b. Personnel
c. Duties
8. Record keeping
a. Cases, autopsies
9. Nurses' training
10. Financial
a. Gross income (1928-29-30-31)
1. Sources
b. Expenses
1. Items
c. Net income (1928-29-30-31)
1. Method of balancing deficit

C. Laboratories (Urban and Rural, other than hospital and health dept.)
1. Distribution
2. Ownership
a. Personnel
1. Training
3. Type
a. Services provided
4. Gross income (1928-29-30-31)
a. By services
5. Expense
a. Items
6. Net income (1928-29-30-31)

D. Analyses and correlation of data from special studies

IX. Interpretations and Conclusions
A. Submit data to sub-committees
1. Recommendations of sub-committees

X. Preparation of final reports

To supervise special details in each county the request has gone forth that each County Society appoint a committee on Public Relations. This committee will be called upon to supply certain local information and to expedite local reports.

It is stressed anew—subscribe prompt cooperation in order that this survey will serve and safeguard your personal interests.

MINUTES OF THE MEETING OF THE COMMITTEE ON SURVEY OF MEDICAL SERVICE AND HEALTH AGENCIES IN MICHIGAN

This special committee held its regular meeting in Lansing, on Sunday, April 17, 1932, with Chairman Marshall presiding and the following members present:

B. U. Estabrook
F. A. Baker
C. S. Gorsline
C. F. Moll
B. R. Corbus
F. C. Warnshuis

1. The committee voted unanimously to engage the services of Dr. N. Sinai as director of the study.

2. Dr. Sinai was present and presented a draft outlining the plan of study and presenting inclusive features of the study. This was gone over thoroughly and discussed in detail by the committee, and upon motion of Gorsline-Estabrook was approved.

3. Upon motion of Estabrook-Gorsline, Dr. Sinai and the Secretary were instructed to proceed with the institution of the preliminary details of the survey as outlined on the schedule that was adopted.

4. Upon motion of Baker-Gorsline, the expense accounts thus far incurred were approved and ordered paid.

5. Chairman Marshall nominated the following sub-committees:

(A) University Hospital
H. W. Plaggemeyer, Detroit
J. G. R. Manwaring, Flint
J. B. Jackson, Kalamazoo

(B) Tuberculosis
1. H. D. Chadwick, Detroit
W. H. Winchester, Flint
2. O. R. Yoder, Kalamazoo
F. P. Currier, Grand Rapids

Upon motion duly made these nominations were approved and the committees so constituted.

6. Upon motion duly made the committees—

(C) 1. Laboratories
2. Public Health
3. Industrial

are to be appointed from nominations made by committee members, who will submit names within the next week.

The committee adjourned at 6:00 p. m.

F. C. WARNSHUIS,
Secretary-Ex-officio.

POST-GRADUATE OPPORTUNITIES SUMMER COURSES

The Michigan State Medical Society and the Department of Post-Graduate Medicine of the University of Michigan announce following courses for graduates to be held in Detroit:

PRACTITIONERS' COURSE IN MEDICINE, SURGERY, OBSTETRICS and PEDIATRICS. June 6 to 18, inclusive, 8:00 a. m. to 4:00 p. m.

PROCTOLOGY, June 6 to 18, inclusive, 8:00 a. m. to 12:00 m. Receiving Hospital, Detroit. Doctors L. J. Hirschman, E. G. Martin, and Associates.

GYNECOLOGICAL PATHOLOGY. June 6 to 18, inclusive, 8:00 a. m. to 12:00 m. Pathological Laboratories, Detroit College of Medicine and Surgery, Detroit. Practitioners taking this or the preceding course may arrange to spend the afternoons in the Library, Pathological Laboratories, or in the General Practitioners' Course.

Enrollment in all courses is limited. For further information, address the Deparment of Post-Graduate Medicine, University Hospital, Ann Arbor, Michigan.

POST-GRADUATE CONFERENCE

The Michigan State Medical Society and the Department of Post-Graduate Medicine, University of Michigan, held a Post-Graduate Conference of the 7th Councilor District at the Harrington Hotel, Port Huron, Tuesday, April 19, 1932, T. F. Heavenrich, M.D., Councilor, presiding.

The afternoon program included the following: "Psychiatry as Related to the Physician," P. V. Wagley, M.D., Pontiac. "Golfers Itch and Athletes Foot." Lantern slides—Cyrus K. Valade, M.D., Detroit. "Fractures." Lantern slides—A. D. La Ferte, M.D., Detroit.

Dinner was served at the Harrington Hotel at 6:15 P. M., after which the following papers were presented: "Society Activity"—Carl F. Moll, M.D., State President, Flint. "Palliative and Surgical Treatment of Internal Hemorrhoids." Lantern slides—L. J. Hirschman, M.D., Detroit. "What the General Practitioner Should Know About the Prostate"—Harry W. Plaggemeyer, M.D., Detroit. "Trans-urethral Prostatectomy." Moving pictures—Carl Weltman, M.D., Detroit.

COUNTY SOCIETIES

BERRIEN COUNTY

At the December meeting of the Berrien County Medical Society held in Niles at the Four Flags Hotel the following new officers were elected for 1932: President, Carl A. Mitchell, Benton Harbor; vice president, John Ames, Niles; secretary-treasurer, W. C. Ellet, Benton Harbor; delegate to the State Society, E. J. Witt, St. Joseph.

The first meeting for 1932 was held at the Hotel Vincent in Benton Harbor when the new officers were inducted into office. The Secretary's annual report was read and accepted, and the report of the delegate to the special meeting of the House of Delegates in Jackson was also read and placed on file.

The report of the Committee on the care of the Indigent Adult Afflicted was read and placed on file and the Committee instructed to meet with the Board of Supervisors at their April meeting to arrange for the care of these cases for 1932.

A resolution of sympathy to the family of the late Doctor Fred Rice Belknap, a former member of this Society, was passed.

A questionnaire sent out by the Secretary to the members of the Society was partially summarized, and the Executive Committee were instructed to act on the suggestions which these answers gave on the conduct of the Society for the coming year.

W. C. ELLET, *Secretary.*

BAY COUNTY

A regular meeting was held Wednesday, February 24, at the Wenonah Hotel, at which time the program was given over to sound pictures of abdominal surgery.

Wednesday, March 9, Dr. T. Leucutia, of Harper Hospital, addressed the society on the question of "Radiological Consideration of Malignancies."

At the meeting of February 24, the Society instructed the secretary to protest to the two U. S. Senators and our district Congressman against the revival of the Sheppard-Towner bill. The telegram and subsequent replies from Senators Couzens and Vandenberg and Congressman Roy O. Woodruff are here presented for the interest of the Journal's readers.

L. FERNALD FOSTER, *Secretary.*

Telegram to
Hon. James Couzens
Hon. Arthur Vandenberg
Hon. Roy O. Woodruff
"We urge disapproval of the H. R. 7525 and S. 572. Letter follows."

The letter which followed the telegram was a copy of the statement prepared by the Wayne County Medical Society.

The copies attached are from the correspondence in reply to the telegram and letters.

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
WASHINGTON, D. C.

February 26, 1932.

Dr. L. Fernald Foster,
Bay City, Mich.

Dear Dr. Foster:

I am in receipt of your telegram of the 25th, relative to the action taken by the Bay County Medical Society with regard to H. R. 7525 and Senate 572, and will be glad to bear in mind your opposition thereto if this legislation comes before the House for action.

With kindest regards, I am

Sincerely yours,
ROY O. WOODRUFF.

CONGRESS OF THE UNITED STATES
WASHINGTON, D. C.

February 29, 1932.

Dr. L. Fernald Foster, Sec'y,
Bay County Medical Society,
Bay City, Mich.

Dear Dr. Foster:

I am just in receipt of your letter of the 25th, setting forth reasons why the Bay County Medical Society opposes the enactment of H. R. 7525, and will place it on file for reference in case this legislation comes before the House for action this session.

With all good wishes, I am

Sincerely yours,
ROY O. WOODRUFF.

UNITED STATES SENATE

February 29, 1932.

Dr. L. Fernald Foster, Secretary
Bay County Medical Society,
Bay City, Mich.

My dear Dr. Foster:

This will acknowledge your telegram respecting S-572. I beg to advise you that while I have heretofore favored this proposition in a general way, yet I feel that *this* year is no time to renew *any* federal bounties of *any* nature if we are to overtake the federal deficit and balance the federal budget and save the public credit. Therefore, unless some unexpected reason develops, I shall share your view in opposition to S-572 at the present time.

With warm personal regards and best wishes,

Cordially and faithfully,
A. H. VANDENBERG.

UNITED STATES SENATE

February 25, 1932.

Dr. L. Fernald Foster, Secretary,
Bay County Medical Society,
Bay City, Mich.

Dear Sir:

I have your telegram:

"We urge disapproval of H. R. 7525 and S. 572. Letter follows."

This bill is before the Committee on Commerce; just why I do not know, but in any event it is not yet before the Senate. I do not know in what form the bill will come before the Senate, or what the report from the committee will say. I am, however, of the impression that like legislation has heretofore been enacted by Congress, and that it has been responsible for effective work among the states.

Very truly yours,
JAMES COUZENS.

UNITED STATES SENATE

February 29, 1932.

Dr. L. Fernald Foster,
Bay County Medical Society,
Bay City, Mich.

Dear Sir:

I have your letter of the 25th, confirming your telegram of that date concerning S. 572.

This bill may not come to the floor of the Senate. If it does, the views expressed in your letter and telegram will be kept in mind, although generally speaking, I am in favor of the Federal Government assisting the states in such matters, wherever it can be safely done.

Very truly yours,
JAMES COUZENS.

CALHOUN COUNTY

The March meeting of the Calhoun County Medical Society was held at the Athelstan Club on Tuesday evening, March 1, 1932.

Meeting called to order by President Theodore Kolvoord.

Minutes of the February meeting were approved as printed in The Bulletin.

Three communications were read. One from the Kalamazoo Academy of Medicine, stating that the state meeting would be held in Kalamazoo in September, and therefore the only possible date for the combined meeting of the Calhoun and the Kalamazoo Medical Societies would be in July or August, was discussed. It was decided that we should have no meeting at all during the months of July and August, and therefore we could not have a joint meeting of the two societies this year. The Kalamazoo Academy stated that they would accept us as their special guests at the state meeting.

Next a communication concerning the tuberculosis situation in Michigan was read. Due to the fact that the waiting lists for admission to the sanitariums are lengthy and sometimes filled with patients who have an erroneous diagnosis, and due to the fact that many positive cases are treated by artificial pneumothorax which require medical care, there is a great need for physicians who can make correct diagnosis and continue the refilling treatments for the pneumothorax. For this purpose courses of intensive instruction in the diagnosis and medical and surgical treatment of tuberculosis will be given at intervals throughout the year at the University Hospital, Ann Arbor, the Herman Kiefer Hospital, Detroit, and at the Howell Sanitarium. The first course will be given at University Hospital, Ann Arbor, April 11-15. Any who are interested may communicate with the Department of Post-Graduate Medicine, University Hospital, Ann Arbor.

The third communication had to do with the procedure in case of a threat or declaration of suit for alleged malpractice. For information concerning this communication, please confer with the county medical secretary.

The following bills were authorized to be paid:

Phoenix Printing Co.	$37.15
Dr. Plinn Morse	24.00
Mailing charges	1.75

The final action on the application of Dr. Arthur A. Humphrey was taken. Dr. Wilfred Haughey moved that the rules be suspended and the secretary be instructed to cast a unanimous vote for Dr. Arthur A. Humphrey for membership in the society. Passed. The secretary was so instructed.

It was announced by the treasurer that the time limit for paying the $12.50 dues had arrived, and that he hoped the limit would be extended, but he could not promise it.

Dr. Rosenfeld attempted to get the general opinion of the society on the desirability of establishing through the Business Men's Credit Bureau some credit organization. This will be discussed more fully in The Bulletin.

The meeting was turned over to the program committee, and Dr. A. A. Hoyt gave a talk on "Diphtheria Immunization," and this was followed by a talk by Dr. Louis J. Hirschman, of Detroit, on "Colonic Dysfunction vs. Colitis."

No further business coming before the meeting, a motion to adjourn was carried.

GENESEE COUNTY

The regular meeting of the Genesee County Medical Society was held in Hurley Hospital Auditorium on March 16, with Dr. J. C. MacGregor, president-elect, presiding. Dr. Raphael Isaacs of Ann Arbor was the speaker of the day, his subject being, "The Anemias." This was discussed in detail by many members of the Society.

Genesee County meetings are held twice a month and are preceded by a luncheon in the Hospital dining room. The Society is proud of the large attendance at these meetings, which is partially due to the convenience of the meeting place, and partially to the excellent programs and speakers arranged for by the committees.

The second meeting in March was held on the 30th. The speaker at this meeting was Professor G. M. Trout of the Michigan State College at Lansing. The subject was, "Newer Discoveries Regarding Milk as an Article of Diet."

Dr. R. S. Halligan, president of the Society, has just returned from Rochester, and is at present recovering from a serious illness. The Society have missed him and are looking forward to seeing him preside at the meetings in the near future.

Dr. W. H. Marshall was honored at a birthday

dinner on Wednesday, March 23, in recognition of the great service he has rendered as a teacher of Medicine. More than one hundred of his associates, also many friends and members of the Hospital Board, paid high tribute to Dr. Marshall on this occasion. He has not only given a great deal of his own time to the teaching service at Hurley Hospital, but has organized practically all of the clinics and lectures given at this institution, in all branches of medicine, for the benefit of the internes and younger members on the Hospital staff. Dr. J. B. Elliot, Professor of Medical History at the University of Toronto, a former classmate of Dr. Marshall, was the speaker of the evening, his subject being, "Great Teachers of Internal Medicine." Others who spoke in appreciation of Dr. Marshall's outstanding work were, Dr. Carl F. Moll and Dr. Leon M. Bogart of Flint, Dr. James Davis of Detroit, and Dr. A. C. MacKinnon of Atlanta. Many letters and telegrams of congratulation were received from physicians in Michigan and Ontario, who were unable to attend. "There is no satisfaction greater or more enduring than the respect of one's associates," was the reply to the many tributes paid him. "What success I have had has been possible only because of your splendid coöperation. I have profited as much as you by my pleasant activities at the Hospital."

C. W. COLWELL, *Secretary.*

GRATIOT-ISABELLA-CLARE COUNTY

The February meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Wright Hotel, Alma, Thursday, February 18. Nine members and two visitors had dinner together. Three members came in after dinner.

At 7:30 P. M. President Burt called the meeting to order. Minutes of the January meeting were read and approved. Some communications were read.

President Burt then called on Dr. W. E. Kaufman, Professor of Chemistry in Alma College, who spoke on "The Relation of Colloid Chemistry to Insanity." The doctor said his paper was based on Wilder D. Bancroft's published work on this subject. Doctor Kaufman's paper was well received and produced much favorable comment.

On behalf of the Society, President Burt thanked Doctor Kaufman for his kindness in presenting this subject to the Society.

Meeting adjourned.

The March meeting of the Gratiot-Isabelle-Clare County Medical Society was held in the Wright Hotel, Alma, Thursday, March 24. Sixteen members and five visitors had dinner together. One member came in after dinner.

At 7:30 P. M. President Burt called the meeting to order. The Minutes of the previous meeting were read and approved. President Burt then introduced the speaker of the evening, Dr. Thomas D. Gordon from the Grand Rapids Clinic, whose subject was "Health Habits in Children." Some of the points the doctor stressed were as follows: Pregnant mothers should have plenty of milk, cod-liver oil and green leafy vegetables; begin to teach baby when two months old to sit on vessel to urinate and defecate; bed wetting will usually be prevented in this way. If such a case does come, the correction should be moral or psychological rather than by punishment. Give rewards, and praise judiciously. Stop thumb sucking at the first sign of it by various ways, such as putting stockings on the hands or something stiff around the elbows.

The doctor's talk was enjoyed by every one present. Many took advantage of the opportunity to ask Doctor Gordon questions. Doctor Burt called on Doctors Kempton and O'Riley and Professor Hamilton to discuss Doctor Gordon's paper.

On behalf of the Society, President Burt invited the visitors to come again and thanked Doctor Gordon for his instructive talk.

Meeting adjourned.

E. M. HIGHFIELD, *Secretary.*

MUSKEGON COUNTY

The Muskegon County Medical Society reports sixty members paid for Muskegon County and State Medical Societies for 1932.

In January a meeting was held for general discussion of the new plan for caring for the County Indigents.

In February, Dr. Frank Garber, Sr., gave an interesting paper on "Hemorrhage from the Bowel."

The March meeting was held at the Occidental Hotel, Muskegon, March 25. Drs. Shattuck W. Hartwell and Wm. Le Fevre presented papers on "Diabetes in Surgery."

M. E. STONE, *Secretary.*

SAINT CLAIR COUNTY

A regular meeting of Saint Clair County Medical Society was held at the Edgewater Inn, Port Huron, Michigan, Tuesday, March 15, 1932. Supper was served to eighteen members and four guests at 6:15 p. m. The meeting was called to order by President Patterson at 7:45 p. m. with twenty-four members and four guests present. The minutes of the preceding meeting were read. A letter inviting the members of the Society to attend a noonday luncheon of the Lions Club of Port Huron on March 16, 1932, was read and five members signified their intention to attend. A letter was read from J. R. Ware, M.D., chairman of the local committee of the movement in connection with the observance of National Negro Health Week.

L. J. Hirschman, M.D., of Detroit, addressed the Society on, "What the general practitioner should know about diseases of the rectum and the proper treatment of same." The address was very practical and pointed out proper methods of examination in order to reach an accurate diagnosis as well as proper treatment for the more common ailments of the lower end of the intestinal tract. C. F. Thomas, M.D., and A. J. MacKenzie, M.D., discussed the subject.

C. G. Jennings, M.D., of Detroit, followed with an address on "The hypertensive patient." The address classified arteriosclerosis into three general subdivisions as follows: (a) the hyperplastic type characterized by great thickening of the media, narrowing of the lumen of the vessels, arterial tension above 150 mm. systolic and 90 mm. diastolic pressure and with usually more or less renal damage and dysfunction; (b) the atheromatous type characterized by a usual arterial hypotension and symptoms due to atheroma of aorta, coronaries and cerebral vessels; and (c) a senile type seen only in advanced age and characterized by deposition of lime salts along the vessels of the extremities and a usual normal or lowered systolic blood pressure. A series of lantern slides was shown to illustrate points in pathology and symptomatology which the speaker wished to emphasize, and several case histories were read. The paper was well presented and enjoyed by all present.

A regular meeting of a Saint Clair County Medical Society was held at Edgewater Inn, Port Huron, Mich., Tuesday, April 5, 1932. Supper was served to three guests and ten members, at the conclusion of which Dr. R. L. Dixon, Medical Superintendent of Michigan Home and Training School, Lapeer,

Michigan, addressed the meeting upon the subject, "The Pre-epileptic Child."

Dr. Dixon read a very interesting paper upon the subject, which was very much enjoyed by those present. The speaker stressed the need of bringing this subject to the attention of teachers, playground attendants, nursemaids and others who live in an intimate contact with children. He stated that it was just as important to recognize a definite pre-epileptic or pre-convulsive stage of epilepsy as to recognize early stages of carcinoma, tuberculosis or other general diseases. "If," said Dr. Dixon, "recognition is made in this stage of epilepsy, treatment is much more effective." The speaker also expressed the conviction that the recognition of a definite "personality make-up" was of more importance than the convulsion because all who suffer with the disease may not have the latter symptom. The discussion was opened by Dr. Douglas Treadgold, who approached the subject from the angle of the pediatrist, making a very interesting viewpoint and stressing the ketogenic diet in the control of the disease. Several others present made inquiries which Dr. Dixon covered in his closing remarks. A rising vote of thanks was tendered the speaker before adjournment.

GEORGE M. KESL, *Secretary-Treasurer.*

WAYNE COUNTY

CODE OF ETHICS FOR COMPENSATION CASES*

The Industrial Relations Committee, in establishing the following code, realizes the futility of outlining in detail any definite set of rules to govern compensation cases.

All that can be hoped for is the drawing up of a general working agreement which will provide for a better understanding between physicians having common interests in handling compensation cases.

The Committee deplores the fact that misunderstandings occur at times and it objects to intrusion by insurance companies which causes doctors to "bid" for industrial work and thus "pit" one physician against his neighbor.

We suggest that the following rules be subscribed to by all physicians handling compensation cases in Wayne County:

1. The industrial surgeon shall consider his relations with the factory he serves in the same manner as a physician called to attend a family in general practice.
2. He shall in no way solicit business from or advertise himself to any industrial plant unless he positively knows that the plant in question is not being cared for by any other surgeon.
3. He shall refuse appointment as surgeon by any industrial plant or insurance company concerned in the transaction until he is sure that the factory has no regular surgeon, that the surgeon has resigned, or has been officially discharged.
4. If necessary, he shall acquaint himself of the actual facts of the case by first calling upon the surgeon himself for a statement before entering into any negotiations whatever to take over new work.
5. He shall refuse to go in attendance to any factory regularly under the supervision of another doctor, except in emergency.
6. He shall never on his own initiative discuss rates or fees to any factory or insurance company, either in person or by letter, if this factory is being regularly cared for by another doctor.
7. Any compensation case following injury which is being treated by a physician other than the regular company's surgeon shall not be interfered with providing the doctor shows reasonable skill and diligence in attending the case.
   It is provided, however, that the surgeon regularly employed by the company shall be privileged at proper times and under proper conditions to consult with the attending physician to determine the progress of the case if the employer or insurance company involved so request.
   Both physicians concerned shall preserve a friendly relationship and make the welfare of the patient of paramount interest.
8. Any infringement of these rules shall be construed as an unfriendly act and shall be referred to the Ethics Committee of the Wayne County Medical Society for decision.
9. The Industrial Surgeon should in every way possible raise the standing of this branch of the profession by—
   (a) Personally supervising as much as possible the care of patients at office and factory.
   (b) Preserving a standard of fees paid by insurance companies sufficiently high to insure skillful and painstaking service.
   (c) Fostering a relationship of mutual respect and trust, not only between the Industrial Surgeon and his employers but an ethical relationship with other physicians.

Industrial Relations Committee,
Wayne County Medical Society.

*This Code has been approved by The Council of the Wayne County Medical Society, Detroit. It is published so that physicians doing compensation work may preserve this page for reference purposes.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. J. EARL McINTYRE, President, Lansing
MRS. W. E. McNAMARA, Secretary, Lansing

It is with great pleasure and anticipation that the program for the Tenth Annual Convention to the American Medical Association is printed here for your perusal.

We who stay at home are depending on our delegates for messages of wisdom and help on their return. We are sure their stay will be delightful in the beautiful southern city of New Orleans, and they will have much to impart to us on their return.

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Tenth Annual Meeting, New Orleans, May 9-13, 1932
Headquarters: Jerusalem Temple, 1137 St. Charles Avenue

PRELIMINARY PROGRAM

Monday, May 9, 1932

6:00 P. M. National Board Dinner and Pre-Convention Meeting (for Board Members, only), Orleans Club, 5005 St. Charles Ave.
Tickets $1.50

Tuesday, May 10, 1932

9:00 A. M. General Meeting.....Jerusalem Temple
Mrs. Arthur B. McGlothlan, *presiding*
12:30 P. M. Buffet Luncheon.....Jerusalem Temple
Tickets $1.00
2:00 P. M. Walk through Vicux Carre, with Guides—Starting from the Patio Royale
4:00 P. M. Tea.....Patio Royale
8:00 P. M. General Meeting of the American Medical Association .....Auditorium
10:00 P. M. Reception and Dance in Honor of the Woman's Auxiliary.....Tip Top Inn, Roosevelt Hotel
Hosts: Orleans Parish Medical Society

Wednesday, May 11, 1932

9:00 A. M. General Meeting.....Jerusalem Temple
Mrs. Arthur B. McGlothlan, *presiding*
12:30 P. M. *Auxiliary Luncheon.....Southern Yacht Club
(12 Minutes from Canal Street or Jerusalem Temple.
Luncheon tickets, $1.50; Transportation, 25 cts.)
2:30 P. M. Post-Convention Board Meeting
.....Southern Yacht Club
2:30 P.M. *Through Garden Gates; Glimpses of New Orleans
4:00 P. M. Teas in Private Residences

NEW ORLEANS COUNTRY CLUB

8:30 P. M. Divertissements in the Garden
10:00 P. M. Buffet Supper
Negro Spirituals, Courtesy of the Woman's Auxiliary to the Louisiana State Medical Society

Thursday, May 12, 1932

9:00 A. M. General Meeting.....Jerusalem Temple
Mrs. Walter Jackson Freeman, *presiding*
10:00 to 10:50 } Special Round Table Conferences
11:00 to 11:50 }
.....Jerusalem Temple
12:00 M. Buffet Luncheon.....Jerusalem Temple

Tickets $1.00

1:00 P. M. *Trip to Oak Alley Plantation; visiting Spillway. Returning at 6 P. M. (Round trip, $2 per person)

or

2:00 P. M. *Round-trip over Lake Pontchartrain, via New Bridges ($2 per person)

or

2:30 P. M. *Trip to Versailles Plantation, Battle Field of New Orleans; Docks and Wharves (Round trip $1 per person)

or

2:30 P. M. *Delgado Museum and City Park; Newcomb Art School and Audubon Park (Round-trip $1 per person)

or

2:30 P. M. *Mayan Exhibit, Tulane University (Round-trip, 25 cts. per person)

9:00 P. M. President's Reception and Ball.....Auditorium

Friday, May 13, 1932

9:00 A: M: *Trip to Gulf Coast—Leaving L. & N. Station at 9 A. M., returning to New Orleans at 6 P. M. (Round trip, including luncheon and beautiful scenic drive along the coast, $6.00 per person)

10:00 A. M. Golf Tournament.....Metairie Golf Club

*Transportation paid by individual

All trips start from Jerusalem Temple.

MRS. CHAS. J. BARONE,
Chairman Publicity Committee.

MANAGEMENT OF ACUTE BRAIN INJURIES

Claude C. Coleman, Richmond, Va., discusses certain observations made on a series of 596 patients who received treatment in the Hospital Division of the Medical College of Virginia during a period of five years, cosing Jan. 1, 1929. The methods employed in the treatment of this group are briefly reviewed. Of these 596 patients, 453 had head injuries of sufficient severity to produce a demonstrable fracture of the skull or unconsciousness, or both. There were 275 demonstrated fractures of the skull in this series. Of the group of 596, 143 are excluded from consideration here because of the fact that, although they had head injuries requiring a stay in the hospital, they were injuries of a mild type. In the group of 453 under consideration, 78 cranial operations were performed, and of these operations 32, or 7 per cent, were subtemporal decompressions, 22 on the right side and 10 on the left. In the 453 cases there were 84 deaths, a mortality of 18.5 per cent, 34 patients dying in less than twelve hours, and 50 after this period. The mortality is and probably will remain inevitably high in those patients severely shocked from extensive damage to the basal structures and widespread laceration and contusion of the brain. A smaller group, because of high intracranial pressure due to contusion with edema and to subdural and extradural hemorrhages, will require a subtemporal decompression or some form of operation for removal of the clot. The series shows that subtemporal decompression with drainage was done in more than 7 per cent of the cases, to offset intracranial pressure when there were no localizing symptoms. In the author's experience, palliative measures, such as dehydration, hypertonic solutions and therapeutic spinal puncture, cannot be advantageously substituted for subtemporal decompression with drainage in all cases of brain injury. The patients in the series who urgently needed relief from compression did better with operation, frequently combined with these more simple measures. If it is necessary to use ether anesthesia in order to perform a subtemporal decompression, this should be noted as a relative contraindication to operation, but the urgent need for relief from pressure may nevertheless require operation. Cranial operations for trauma can generally be done with local anesthesia.—*Journal A. M. A.*

THE DOCTOR'S LIBRARY

MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 15, No. 4 (Boston Number—January, 1932). Octavo of 268 pages with 18 illustrations. Per Clinic Year, July, 1931, to May, 1932. Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1932.

A CLINICAL STUDY OF THE ABDOMINAL CAVITY AND PERITONEUM (A HOEBER SURGICAL MONOGRAPH). By E. M. Livingston, Associate Visiting Surgeon, Belleview Hospital, N. Y.; 866 pp., 372 illust. Paul B. Hoeber, Inc., New York, 1932. $15.00.

A noteworthy effort to stress the fundamentals of anatomy, physiology and chemistry is evident in a number of clinical monographs of the past year or so. The present work is an exceptional example of this method. The material, intended as a comprehensive "post-graduate" study of the abdomen, is organized into three general topics, (1) the abdominal walls and cavity, (2) the abdominal contents and (3) visceral neurology. At each stage, anatomical and functional relationships are accompanied by descriptions of the pathology, clinical symptoms and methods of examination. Clarity is the effect produced by the numerous diagrams, charts and photographs.

The work is written for both the clinician and the student. For the former, a full index and marginal notes make the material easily available. Structure, function, pathology and the clinical phases of the subject are dealt with in adjacent pages. The student will find the work well organized. Fundamentals are stressed and the anatomy is treated from the standpoint of its mechanical importance rather than in the usual textbook approach. A questionnaire of over a thousand items will aid in the review and mastery of any topic treated in the text.

A summary of the important classical studies on the abdomen, usually with facsimile reproductions of the important pages of the original articles, and a concise account of the authors, provides a section of no little historical interest.

—W. T. D.

FEMALE SEX HORMONOLOGY. By William P. Graves, A.B., M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School; Surgeon-in-Chief to the Free Hospital for Women and to the Parkway Hospital, Brookline, Massachusetts. 131 pages, with illustrations. Philadelphia and London: W. B. Saunders Company, 1931. Cloth, $3.50.

According to the author this monograph is intended to furnish a concrete picture of a complex subject. The plan presents in chronological order the steps by which this particular department of medicine within three decades has risen from a position of insignificance to a stage that is highly scientific. Among the subjects treated are, The Early History of the Female Sex Gland; The Sexual Cycle in Animals; Sex Cycles in the Ovary; Sex Cycle of the Human Uterus and Its Correlation with that of the Ovary; The Search for the Hormones of the Ovary; The Discovery of the Hypophysis as an Agent in the Sexual and Reproductive Cycles; The Hormones of the Anterior Lobe of the Hypophysis Identified; New Theories Regarding Menstruation and Parturition as well as Lactation. There is a chapter on Organotherapy. A leading feature of the work is the Glossary of seventeen pages dealing with the terms that have been brought into use in the evolution of the subject.

APPLIED PHARMACOLOGY. By A. J. Clark, M.C., M.D., F.R.C.P., Professor of Materia Medica and Pharmacology in the University of Edinburgh. Formerly

Professor of Pharmacology in the University of Cape Town and later in the University of London. Fourth Edition with 72 illustrations, Philadelphia, P. Blakiston's Son & Company, Inc. 1932. Price $4.00.

This book is a storehouse of very valuable information on the action of drugs. The fourth edition has made it possible to include a number of features of recent development. The theory of Loewi on the action of drugs autonomic system is discussed as well as advances that have taken place in the past two years in the knowledge of endocrines and vitamines. There has been a complete revision of the chapter on Pharmacology of the Skin. The book is convenient in size and practical in its treatment of the various subjects. In addition to drugs proper there are chapters on Vitamines, Inorganic Metabolism and a very enlightening one on The Pharmacological Action of Radiations Including the X-rays and Radium. The book will be found to be a very valuable companion to a good work on therapeutics.

UNITED STATES ARMY X-RAY MANUAL. Authorized by the Surgeon-General of the Army. Second Edition. Re-written and Edited by Lt. Col. H. C. Pillsbury, M.C., U. S. A. 228 Illustrations. Paul B. Hoeber, Inc., New York, 1932.

The first edition of this little Manual appeared during the world war, having grown out of the necessity of something compact and to the point. It was a composite work. As stated at the time, "The Manual was not intended to be a complete treatise on Roentgenology, but in the portion devoted to X-ray diagnosis the aim had been to state as concisely and clearly as possible the facts that have been established by experience and to avoid all controversial points." Naturally conditions which prevailed during the stress of war have changed and the problems of the Roentgenologist are those incidental to meeting the needs of the laity. The chief changes noted in this second edition include descriptions and improvement in apparatus and in methods of interpretation during the past fourteen years. The subject of technic in the present edition occupies the entire chapter instead of being scattered throughout the work. While the book is still a Manual for the military Roentgenologist, it will be found of value to the Roentgenologist in private practice as well, as it contains a vast amount of information in available and compact form.

ULTRAVIOLET RADIATION USEFUL FOR THERAPEUTIC PURPOSES: SPECIFICATION OF MINIMUM INTENSITY, OR RADIANT FLUX

W. W. COBLENTZ, Washington, D. C., calls attention to the fact that, in the literature, statements occur that in ultraviolet irradiation the production of an erythema is unnecessary; that a suberythemal dose is sufficient for the maintenance of health. However, without physical or photochemical measurements, the erythema test is the only means of determining whether appreciable ultraviolet is emitted by the source. Hence, while such statements may be made in good faith, they open the way to fraud by irresponsible venders of alleged sources of ultraviolet radiation. Hence, there is need of a specification of ultraviolet intensity. In this connection it is of interest to note that the spectral erythemic reaction is produced only by ultraviolet rays of wavelengths shorter than about 315 millimicrons, with a maximum reaction at the wavelength 297 millimicrons (2,967 angstrom units) and a lesser maximum (55 per cent) in the region of 250 millimicrons. It is to be noted also that in a very general way the spectral erythemic response coincides with the photochemical reaction in the activation of ergosterol (which has the property of curing rickets) and in the curing of rickets by ultraviolet irradiation. However, this fact is considered merely a coincidence that is useful in the evaluation of the output of different sources of ultraviolet radiation and in the specification of the minimum ultraviolet flux (in microwatts per square centimeter) necessary to insure effective results in ultraviolet radiation therapy, as for example in the healing of rickets. By effective results is meant effecting a cure as quickly and as cheaply as by medicaments. This includes the expense of electric power, heating of the room, service of an attendant, and any factors that may subject the child to other ills (common colds in home treatments) than the one for which ultraviolet is being administered. On this basis, the specification of a minimum ultraviolet radiant flux, of wavelengths less than and including 313 millimicrons, was arrived at from a consideration of experimental data and general survey of the question. According to this specification the intensity (radiant flux) from sources of heterogeneous ultraviolet radiation, of wavelengths less than and including 313 millimicrons, evaluated according to the spectral erythemic response curve, should not be less than the equivalent of 20 microwatts (200 ergs) per square centimeter of homogeneous radiation of the wavelength of maximum erythemogenic effectiveness, which wavelength for practical purposes is taken at the emission line of mercury vapor, 2,967 angstroms (297 millimicrons.—*Journal A. M. A.*

SUPRAPUBIC PROSTATECTOMY WITH CLOSURE OF BLADDER

Alexander Hamilton Peacock, Seattle, believes that the success of primary closure of the urinary bladder depends on perfect hemostasis of the prostatic bed and good drainage by catheter. Suture of the capsule is surgically correct and can be performed by ordinary surgical skill and instruments. Primary closure of the bladder affords a shorter and more comfortable convalescence. Suture of the prostatic capsule produces better anatomic and functional results. With this method, post-operative bleeding has been practically eliminated. The sloughing post-operative wound is a thing of the past. Objections raised to closure of the bladder can be refuted by the good results of those surgeons now employing the close method of suprapubic prostatectomy.—*Journal A. M. A.*

UNUSUAL SKIN REACTION TO EPINEPHRINE

According to R. W. Lamson and S. O. Chambers, Los Angeles, the subcutaneous administration of epinephrine may be attended with certain protracted or even permanent manifestations. In one patient observed by them so small a dose as 0.2 c.c. caused a definite anemia of the skin in an area of at least 3 cm. in diameter. This anemic area was observed more than six hours after the injection, and somewhat larger doses have prolonged such manifestations for a period of from twenty-four to thirty-six hours. In spite of such protracted action with accompanying anemia of the skin, no permanent change was observed. The skin immediately around the site of injection shows marked atrophy suggesting the appearance of the foveated scar which follows a "primary" vaccine virus reaction. These unusual reactions may represent a local hypersensitivity or idiosyncrasy to the drug, but they have not been accompanied by any untoward systemic responses.—*Journal A. M. A.*